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ABSTRACT

While this guide was designed specifically for teachers in Montgomery County, Maryland, Schools, much of the material can be used by individuals nationwide. Contents include nature studies, pollution, energy, land use, environmental design, recreation, and government and the public aspect. Resources listed under these headings include films, textbooks, multimedia materials, guest speakers, and environmental units. Attempts have been made to list materials appropriate to grades K-12 and to label them according to age or grade levels. Further sections of the guide list organizations, newsletters, periodicals, and guides having to do with the environment. The format of this publication is in the style of the Whole Earth Catalog, having illustrations interspersed among the columns of resource materials. Where possible or appropriate, a brief description of the materials is included. (MA)

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ENVIRONMENTAL EDUCATION RESOURCE GUIDE

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Division of Physical Health, Diet,
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Montgomery County Public Schools
Rockville, Maryland

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"To see the earth as it truly is, small and blue and beautiful in that eternal silence where it floats, is to see ourselves as riders on the earth together, on that bright loneliness in the eternal cold..."

ARCHIBALD MacFISH

SE 084 391

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INTRODUCTION

The *Environmental Education Resource Guide* is an outgrowth of an earlier effort on the part of the Division of Environmental Education to provide assistance to those Montgomery County Public School teachers wishing to supplement their regular programs with environmental studies. The effort began in 1971 and resulted in a draft document which included a resource list, an illustrative unit, and several matrices and tables which attempted to show the relationship between environmental education and the science and social studies programs. However, it became apparent that the document was too ambitious in its scope. The task of interrelating environmental education to science and social studies programs, which themselves were undergoing revision, proved particularly difficult. Also, a number of educators who had seen the draft questioned the necessity of including a unit in the guide in light of the general availability to the schools of commercially developed materials. To resolve these difficulties, the document was revised and simplified, and only the resource concept was retained.

The *Environmental Education Resource Guide* in its new format contains some of the resources listed in the old guide, together with many entries and categories of entries which have been added. Some of these, not found in conventional bibliographies, include newsletters and identify local parks, field trip sites, and human resources. All resources are grouped according to main topics.

Before an item was included in the guide these questions were raised: How inexpensive and accessible is the resource? How useful will it be in promoting active, hands-on types of learning activities? What is the environmental worth of the resource?

In compiling the guide, an attempt was made to include as wide a variety of resources as possible; e.g. films, textbooks, multimedia materials, guest speakers, and environmental units. Since environmental education encompasses Grades K-12, every effort was made to include enough material for all these levels. Whenever possible, age groups or grade levels are indicated in resource descriptions.

A unique feature of the guide is an extensive list of abstracts of environmental units which were produced by school districts and educational institutions throughout the nation. Many of these units are of excellent quality, including learning objectives, maps, charts, and other information useful to the classroom teacher. Reproductions of some of these can be obtained at the MCPS Educational Services Center.

In compiling the resource lists, special consideration was given to those resources available either within Montgomery County or the greater Washington metropolitan area. For example, local sites for field trips such as Carderock and Turkey Run are given more prominence than those in more remote areas. Similarly, the list of guest speakers and human resources has a distinctly local flavor — but not to the exclusion of prominent national environmental organizations such as the National Audubon Society.

The format of the *Environmental Resource Guide* was inspired to a degree by the *Whole Earth Catalog*, with pictures and illustrations interspersed in the columns. The teachers and students who assembled the guide hope this will make browsing through the lists more enjoyable. In the process, it is hoped that you will find much which helps you in your efforts to share with young people knowledge of and concern for the environment.

GENERAL ENVIRONMENT

BOOKS

Adventures in Environment. Morristown, N.J.: Silver Burdett Company, 1971.

A textbook for Grades 6-8, published by the National Environmental Education Development (NEED). Chapter topics include wind, plants, animals, noise, water and mapping. Each chapter also has simulation exercises to acquaint the student with the subjects and their problems.

Billington, Elizabeth J. **Understanding Ecology.** New York: Frederick Warne and Co., 1971.

Commoner, Barry. **The Closing Circle.** New York: Bantam Books, 1972. pap. \$1.95.

Commoner is not only a professional scientist; he is also one of America's most highly regarded teachers. He uses many forums to hammer away repeatedly on behalf of environmentalism: late night talk shows, magazine interviews, lectures, and books. In **The Closing Circle**, Commoner states that our massive environmental pollution problems have not been caused primarily by overpopulation, nor by increasing wealth, but they have stemmed mainly from technological changes since World War II.

Commoner's laws of ecology:

"Everything is connected to everything else."

"Everything has got to go somewhere."

"There is no such thing as a free lunch in nature."

"Nature knows best."

Environmental Education: An Annotated Bibliography, 1974. N.E.A. (National Environmental Education) Publications Order Department. The Academic Bld., Saw Mill Rd., West Haven, Conn., 06516. Order: Stock #381-12096, \$1.00.

Falk, Richard A. **This Endangered Planet: Prospects and Proposals for Human Survival.** Rev. 1972.

Farb, Peter. **Ecology.** New York: Time-Life Books, 1963; rev. 1970.

The following list of books is highly recommended environmental reading for children Grades K-6:

Noah's Ark, by Gail E. Haley. New York: Atheneum, 1971.

The Dead Tree, by Alvin Tresselt. New York: Parents, 1972.

My Side of the Mountain, by Jean George. New York: Dulton, 1975.

Let's Look Under the City, by Herman and Nina Schneider. Reading, Mass.: Addison Wesley, 1974.

Gay-Neck, The Story of a Pigeon, by Dhan Gopal Mukerji. New York: Dulton, n.d.

Environmental Resource Papers in the "Investigating Your Environment" Program. Book 1: **The Environment: Some Viewpoints**; Book 4: **Human Population**; Book 5: **Solid Waste**; Book 6: **Pesticides**; Book 7: **Land Use**; Book 8: **Water Quality**. Menlo Park, Ca.: Addison-Wesley Publishing Co., 1975.

Leopold, Aldo A. **A Sand County Almanac and Sketches Here and There.** New York: Oxford University Press, 1968.

Nash, Roderick (ed.). **The American Environment: Readings in the History of Conservation.** Reading, Mass.: Addison-Wesley Publishing Co., 1968.

Nobile, Philip. **Complete Ecology Fact Book.** Garden City, N.Y.: Doubleday Press, 1972.

Whole Earth Epilogue. Baltimore: Penguin Books, n.d. (by POINT).

Whole Earth is a catalog that has to be seen (and read) to be believed. It "functions as an evaluation and access device. With it, the user should know better what is worth getting and where and how to do the getting."

Contents include sections on whole systems, land use, shelter, soft technology, crafts, community, nomadics, communications, and learning.

Whole Earth's style is brash and personal. Its viewpoint is organic and slightly counterculture. It advertises a diversity of resources that can be used for learning about, coping with, and living in today's world. There are hundreds of "how-to" books reviewed (how to make adobe bricks, solar houses, environmental toilets, organic gardens, etc.)

Many of **Whole Earth's** items deal directly or indirectly with the environment and with environmental education. Besides books, many other items are cataloged — ice cream makers, kayaks, records, games, etc. Environmental organizations are listed, along with their newsletters and magazines.

CURRICULUM AIDS

Aids to Environmental Education, Grades 4-6.

Booklet, 37 pp. Available from HEW.

Lists bibliographies, books, curriculum materials, filmstrips, graphics, magazines, and newsletters which will help students analyze their experience and synthesize them.

Aids to Environmental Education, Grades 7-9.

Booklet, 44 pp. Available from HEW.

Aids to Environmental Education, Grades 10-14.

Booklet, 47 pp. Available from HEW. See description above.

All Around You — An Environmental Study Guide.

Book, 160 pp. Illustrated. Available directly from U.S. Department of the Interior, Bureau of Land Management.

This study guide contains activities for interdisciplinary environmental studies in the classroom, the school yard, the community, and the natural and rural environments.

Blue Prints for Action. Girl Scouts of America, 830 Third Ave., N.Y., N.Y. 10022. 1973.

This Girl Scout Environmental Action Booklet contains 25 outdoor or community action type activities. Examples: cleaning a river; making a gravel pit into a recreation area; building a nature trail; restoring a pond; and lobbying for more environmentally sound packaging.

Contours: Studies of the Environment Series.

William A. Andrews (ed.). Englewood Cliffs, N.J.: Prentice-Hall, 1972.

Series includes:

A Guide to the Study of Freshwater Ecology

A Guide to the Study of Soil Ecology

A Guide to the Study of Terrestrial Ecology

A Guide to the Study of Environmental Pollution

Ecology Action Pack. The McDonald Corporation, Oak Brook, Ill. 60521. (For sample of material, see TREES section, "recycling paper" activity.)

Ecology Packets in French and German. Contains cartoons, activities, articles, and plays concerning environmental action and problems presented in French and German, available from:

Minnesota State Department of Education, Capital Square Building, St. Paul, Minn. 55101.

Wisconsin Department of Public Instruction, 126 Langdon St., Madison, Wis. 53702.

Activities for Junior and Senior High:

Energy and Man's Environment — Activity Guide,

by Thomas Rise. Seattle: University of Washington Press, 1973. Permission is granted for use by non-profit educational organizations.

Students make their own soap. Dissolve a 13-oz. can of ordinary household lye* in more than a quart of cold water. Do not use an aluminum vessel. Melt 6 lbs. of clean fat in a large beaker. Pour lye into fat solution. Mix very slowly. Stir for 30 minutes or more. Pour soap slowly into molds, and allow to harden for one week. Compare the cost of this soap to that of store-bought soap. What are the advantages and disadvantages of making one's soap?

(CAUTION: LYE IS DANGEROUS)

Environmental Discovery Series. Edited and published by National Wildlife Federation. This series was written for NWF by the Environmental Science Center of Minneapolis, Minnesota. Each booklet in the series is attractively put together and carefully describes and illustrates activities and experiments for children to perform.

Title	Grade Level	Price
Plants in the Classroom	3-6	\$1.50
Vacant Lot Studies	5-9	1.50
Differences in Living Things	4-8	1.00
Shadows	1-8	1.00
Wind	3-6	1.50
Snow and Ice	1-6	1.50
Man's Habitat — The City	4-9	1.50
Fish and Water Temperature	4-9	1.50
Oaks, Acorns, Climate, and squirrels	1-6	1.50
Nature Hunt	K-1	1.00
(also Special Ed.)		

Sampling Button Population	3-9	1.00
The Rise and Fall of a Yeast Community	6-9	1.00
Genetic Variation	4-9	1.00
Transect Studies	3-9	1.50
Soil	2-9	1.50
Plant Puzzles	1-6	1.50
Tile Patterns and Graphs	1-2	1.00
Brine Shrimp and the Habitat	1-5	1.50
Nature's Part in Art	3-6	1.50
Change in a Small Ecosystem	5-9	1.50
Contour Mapping	4-9	1.50
Stream Profiles	4-9	1.00
Color and Change	K-2	1.00
Outdoor Fun for Students	1-12	1.00

Examining Your Environment Series. Holt, Rinehart and Winston of Canada, Ltd. Published in U.S. by Mine Publications, Inc., 1971, 25 Groveland Terrace, Minneapolis, Minn. 55403.

The Series:

Astronomy
Birds
The Dandelion
Ecology
Mapping Small Places
Mini-Climates
Pollution
Running Water
Small Creatures
Snow and Ice
Trees
Your Senses

Teaching Activities in Environmental Education, Vol. 11, 1974, by John H. Wheatley and Herbert L. Coon, ERIC/SMEAC, The Ohio State University, 400 Lincoln Tower, 1800 Cannon Dr., Columbus, Ohio 43210

Strand Aids. Packet from the National Park Service. Copyright, 1972 by L. Allison. It includes 5 posters to color; 5 activity pages; 1 grand finale sheet to put it all together. The style of writing is a little like *Whole Earth*.

Teaching Materials for Environmental Education. Booklet, 69 pp. illustrated. GPO stock No. 0101-0234. 95 cents. A series of student-paced lesson plans which engage students in investigations of such topics as land use planning water, forest, and urban environments.

GAMES

Camp-a-rama. Game for 2-6 players or groups of players, Grades 3-6.

The players each receive a packet of equipment cards from which they select six and lay them face up in front of themselves. Players follow paths to campsite, encountering certain hazards identified on cards. On each hazard card, there are two or three courses of action from which players may choose. Players may also choose to move as a team or individually.

The players receive points, the number depending on the order in which they arrive at the campsite. (First to arrive receives six, etc.) After all have arrived, players receive activity cards to determine point value of remaining equipment. Largest point total wins.

ORDER: Environmental Education Games, Division of Health, Physical and Conservation Education, Bureau of Academic and General Education, Pennsylvania, Dept. of Education, Box 911, Harrisburg, Pa. 17126

Ecology — Man and Nature. Multi-Level. Vendor: Urban Systems. Consult the publisher's catalog in your IMC for a description.

Extinction — The Game of Ecology. Multi-Level. Vendor: Sinaver Assoc. Consult the publisher's catalog in your IMC for a description.

Life From Death — Ecology Kit 5. Multi-Level. Vendor: Urban Systems. Consult the publisher's catalog in your IMC for a description.

Map-O-Rama. From 6 to 36 players (divided into 6 teams), Grades 5-7.

All players receive 6 maps — population, natural resources, political, products, graphic relief, and precipitation. The first member from Team 1 selects a question from stack of 36 cards (6 questions to each map) and must find the answer on his/her maps. If the answer is wrong, the first player from Team 2 gets a chance, and so on. The child who answers correctly rolls the mil-o-cube to determine how many miles (from the East Coast to the West Coast) the team may move on a map of the U.S., traveling on a 6-lane highway. First team to reach the West Coast wins.

*Highway divided into 25 equal sections.

ORDER: Environmental Education Games, Division of Health, Physical & Conservation Education, Bureau of Academic and General Education, Pennsylvania Dept. of Education, Box 911, Harrisburg, Pa. 17126.

The individual books are available in paperback form and are appropriate for Grades 5-10. They are easy to read, attractive, and emphasize observation and "hands-on" activities.

GENERAL ENVIRONMENT

FILMS

Balance of Life and the Space Age. 1963. P,J. 14 min. color (MCPS F-2675).

Considers earth's living things in terms of their basic needs, pointing out that a community of interdependent plants and animals is called a "balanced system." Explains that astronauts depend for survival on a balanced system, which scientists are trying to set up inside space capsules.

Conservation: A Job for Young America. 1968. P. 19 min. color (MCPS F-4514).

Discusses the increasingly adverse effects of technology on air, water, soil, and wildlife. Stresses the growing need for society to control these by-products of industry and preserve natural resources.

Conservation for Beginners. 1967. P,I,J,S. 11 min. color (MCPS F-4811).

Probes the importance of soil, plants, wildlife, and water. Emphasizes the conservation of these natural resources.

Earth: Man's Home. 1970. P. (MCPS F-6049).

Explains that air, food, water, and certain temperature ranges are essential to man's survival. Discusses reasons why some areas of the earth are more densely populated than others.

Environment. 1971. J,S. 29 min. color (MCPS F-5297).

Examines the causes of deterioration of our environment and probes what balances must be struck to preserve the environment and still maintain our technology and life style.

Environmental Enrichment: What You Can Do About It. 1972. I,J,S. 21 min. color (MCPS F-6082).

Details a step-by-step plan by which a single interested class in a school can mobilize the entire community to make significant contributions to their environment and to the quality of life in general.

The House of Man: Our Changing Environment. 1964. P,I,J,S. 17 min. color (MCPS F-4654).

Reveals the waste of resources in cities, woodlands, and farmlands; and pollution of river waters and of the air. Compares "progress" achieved through wasteful methods and through conservation techniques.

The Lorax. 1972. P. 25 min. color (MCPS F-5514).

An animated film based on the book of the same name by Dr. Seuss. Demonstrates the results of senseless use of natural resources.

National Parks: Our American Heritage. 1963. P,I,J,S. 17 min. color (MCPS F-2625)

Discusses the work of the government agencies in establishing, administering, publicizing, and caring for

our national parks. Emphasizes the need for preserving and maintaining the parks and monuments.

A Strand Breaks. 1959. J,S. 15 min. color (MCPS F-0586)

Traces the consequences of a state of imbalance in nature. Explores the results of overgrazing and hunting, and emphasizes that man must manage his natural environment intelligently.

The World Around Us. 1967. P,I,J,S. 25 min. color (MCPS F-4308)

An introduction to the science of ecology, showing environmental changes in the Chesapeake Bay.

These films may be ordered from Association Films, 600 Grand Ave., Ridgefield, N.J. 07657. Phone: (201) 943-8200. Rental: \$5.00.

The Grand Canyon, 26 min.

An Island in Time: the Point Reyes Peninsula (San Francisco, Calif.), 28 min.

Wilderness Alps of Stehekin: Northern Cascades of Washington, 30 min.

Wasted Woods, 15 min.

Glen Canyon: Dam or Colorado River, 29 min.

Two Yosemite, 10 min.

ORGANIZATIONS

Audubon Naturalist Society, 8940 Jones Mill Road, Chevy Chase, Md. 20015.

An outstanding organization devoted to ecological approach to environmental education. Wide variety of programs offered include nature talks, guided nature walks, publications, etc. Most programs conducted at "Woodend" the beautiful 40 acre headquarters site.

Teachers are encouraged to bring class to "Woodend" (up to 30 students). Staff at "Woodend" also visits schools.

PUBLICATIONS

A World in Danger, by Roberta Hornig and James Welsh. The Evening Star Inc., Washington, D.C.

A 20-page pamphlet containing seven news articles on threats to the environment. The articles appeared in *The Washington Star*, January 11-18, 1970.

The New York Times, *Washington Star-News*, and the *Washington Post* also published collections of news articles on topical issues. Schools subscribing to these school news services can obtain class sets.

Fun With the Environment, a primary grade comic coloring book, published by E.P.A.

Part of the "President's Environmental Merit Awards

Program" (P.E.M.A.P.) created to encourage and recognize student involvement. Address requests to: The President's Environment Merit Awards Program, E.P.A., 401 M. St., SW., Washington, D.C. 20460

Johnny Horizon Program is the Department of the Interior's environment and conservation awareness campaign. It supplies materials, ideas, and programs to schools. One of its publications, *A Better Place To Be*, is a 40-page booklet with more than 100 environmental projects and activities for elementary school children. There are projects on such subjects as ecosystems; energy conservation; solid waste disposal problems; and air, water, land, and noise pollution. Included are instructions for building ecosystems and using school grounds, vacant lots, and city parks for environmental education activities. For further information write to: Johnny Horizon '77 Programs, U.S. Department of the Interior, Washington, D.C. 20240

Let's
Clean Up
America



Johnny
Horizon

GENERAL ENVIRONMENT

OBSERVATIONS ON A POLLUTION WALK

Route of Walk _____

Date _____ Time _____

Weather Conditions _____

Environmental Problems	Observed	Not Observed	Comments
1. smoke from smokestacks, chimneys, burning trash			
2. exhaust fumes from cars, buses, trucks			
3. smog			
4. deteriorating paint on buildings and cars			
5. stained and soot-covered buildings			
6. dying plants and trees near street			
7. people coughing			
8. people using insecticides			
9. eroded banks, hills, lawns			
10. leaking pipes, fountains			
11. dirty streams, rivers			
12. trash in streets, alleys			
13. abandoned cars			
14. open dumps			
15. rats, roaches, dead animals			
16. unpleasant odors			
17. oil spills			
18. junkyards			
19. heavy traffic			
20. crowds			
21. noisy autos, trucks, buses			
22. noisy airplanes			
23. noisy construction equipment			
24. ugly billboards and signs			
25. rundown buildings			
26. broken windows			
27. writing on walls			
28. crowds of people			
29. other			

A Better Place to Be. U.S. Government Printing Office, Washington, D.C. 20402, Stock #2400-00805, \$1.25 copy. An excellent buy.

Our Environment. Cooperative Extension Service, Univ. of Md., College Park, Md. Bulletin 247, 1973. (no copyright)

A booklet published by the University of Maryland Extension Service. Discusses water, air, solid wastes, population, and health and the environment. Could be used by junior and senior high school students.

Outdoor Classrooms on School Sites, U.S. Dept. of Agriculture, Soil Conservation Service, Jan. 1972. 22 pp.

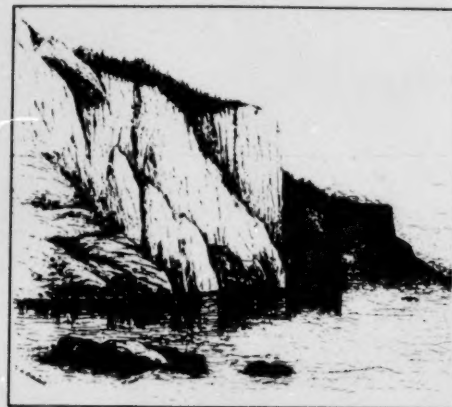
Includes plans and maps for creating outdoor classroom on the school grounds. Write: U.S. Government Printing Office, Washington, D.C. 20402, Number 0100-1458, 25¢

Places for Environmental Education, Educational Facilities Laboratories, 477 Madison Ave., New York 10022. Single copies free, multiple copies 25¢

Identifies types of facilities needed to improve environmental education (1971)

To Save the Earth. National Wildlife Federation, 1412 16th St., NW., Washington, D.C. 20036. 1971. 15 pp. 10¢

A tool kit to measure our environmental quality index. Helps teachers to set up kid-oriented environmental quality programs.



GENERAL NATURE STUDIES

BOOKS

Bonnett, Penelope, and Gill, Don. *Nature in the Urban Landscape*. Baltimore: York Press, 1973.

FILMS

Rivers in the Sky. Bureau of Reclamation, Film Management Center, Building 67, Denver Federal Center, Denver, Colorado 80225.

This 28-minute film describes a weather modification research program designed to produce snow and rain for thirsty areas by artificial means. Explains in simple graphic outline the importance and problems of the work. (The borrower pays for insurance and return postage. Make requests two months in advance.)

Be Your Own Weatherman. (MCPS F-2676) 1962. P,J. 13 min. color.

Pictures a young boy showing his friend his home weather station including some simple equipment. Explains how weather maps are used to forecast the weather.

Once Upon a Wilderness. (MCPS F-5292) 1971. J,S. 19 min. color.

Dramatizes the contrast between the American wilderness of a hundred years ago and the environment of today, showing the destructive technological effects of highways and housing developments.

Inquiry into the American Wildlands. (MCPS F-5299) 1970. J,S. 10 min. color.

Views various aspects of the American wilderness and asks questions which are intended to stimulate thinking about the past, present, and future value of the wilderness.

Open Up My Eyes. (MCPS F-6156) 1971. I, J. 10 min. color.

Combines sound effects, still photography, and motion pictures of wild flowers and streams.

SOIL

ACTIVITIES

From *Environmental Discovery Series* — "Soil". Each student studies his own plot to discover various soil factors that influence plant growth. (Grades 2-9)

BOOKS

Talley, Naomi. *To Save the Soil*. New York: Hale, 1965. Children's book. Available in most Montgomery County Public Libraries.

Van Dersal, William Richard. *Land Renewed, The Story of Soil Conservation*. New York: Walck, 1968.

Available in most Montgomery County Public Libraries.

The Yearbook of Agriculture 1957. Soil. U.S. Dept. of Agriculture.

FILMS

Conserving Our Mineral Resources Today. (MCPS F-2927) 1966. J. 11 min. color.

Explains that the decreasing supply in irreplaceable materials like coal, oil, stone, and metals makes conservation a problem today. Suggests greater development of renewable resources such as waterpower and nuclear and solar energy.

Erosion — Leveling the Land. (MCPS F-4304) 1965. P,I,J,S. 14 min. color.

Examines the surface processes of weathering, erosion, and deposition.

Forest Conservation. (MCPS F-523) EBF, 1949. S. 10 min. color

Demonstrates how fire and the overcutting of timber have caused soil erosion. Discusses good conservation practices and remedial measures to be taken.

Man Uses and Changes the Land. (MCPS F-4901) 1967. P,I,J,S. 11 min. color.

Shows how man used the land as a source of food, clothing, shelter, and materials for industry. Explains how man can change the land by enriching poor soil and developing new uses for it.

Mud. (MCPS F-5959) 1968. I,J,S. 23 min. color. A study of urban erosion and sedimentation. Explains how engineering skills and conservation practices often applied to rural areas can be used in cities to prevent flooding and other drainage difficulties.



Our Soil Resources: Formation and Conservation. (MCPS F-502) 1947. P.I., J.S. 10 min. b&w.

Explains how soil is formed by the physical and chemical disintegration of rock and by the decomposition of plant and animal matter. Points out the world's four soil groups and defines geographic limits of each in the U.S.

Soil: What It Is And What It Does. (MCPS F-2932) 1966. P. 11 min. color.

Explains that different kinds of soil are mixtures of sand, clay, and humus; and tells how the weathering of rocks helps make soils.

Succession — From Sand Dune to Forest. (MCPS F-4296) 1960. S. 16 min. color.

Illustrates the general principles of ecological succession by which an area slowly and continuously changes until it becomes a stable natural community.

Understanding Our Earth: Soil. (MCPS F-974) 1953. P.J. 11 min. color.

Indicates the elements found in topsoil, subsoil, mantle rock, and bedrock; and explains the process of soil making.

ORGANIZATIONS

1. Bureau of Land Management, U.S. Department of the Interior, Washington, D.C. 20250
2. Soil Conservation Service, U.S. Department of Agriculture, Washington, D.C. 20250
3. Soil Conservation Society of America, 7515 NE. Ankeny Road, Ankeny, Iowa 50021

PUBLICATIONS

Better Environment.

Cartoon booklet series from the Soil Conservation Society of America. Eight Booklets in the series include: 1) The Story of Land; 2) The Wonder of Water; 3) Help Keep Our Land Beautiful; 4) Making a Home for Wildlife on the Land; 5) Food and the Land; 6) Working Together for a Livable Land; 7) Plants — How They Improve Our Environment; 8) The Earth — Our Home in Space. (See organization list for address.)

Our American Land. GPO 0100-00656, 25¢

Booklet put out by Soil Conservation Service that presents "a historical dramatization of the need for scientific land management" and describes procedures in such a field. Write: Soil Conservation Service, Education and Publications Branch, U.S. Department of Agriculture, Washington, D.C. 20250.

Maryland Soils. Extension Bulletin 212, prepared by Dr. Fred P. Miller. Cooperative Extension Service, University of Maryland, College Park, Md. (May 1967, reprinted May 1975)

Soil Conservation at Home. U.S. Department of Agriculture, Soil Conservation Service, Agriculture Information. Bulletin 244. U.S. Government Printing Office — 30¢

Tips for city and suburban dwellers.

Sediment — It's Filling Harbors, Lakes, and Roadside Ditches. Soil Conservation Service, Education and Publications Branch, U.S. Department of Agriculture, Washington, D.C. 20250.

In this booklet, the Soil Conservation Service makes it



Each generation has its own rendezvous with the land, for despite our fee titles and claims of ownership, we are all brief tenants on this planet. By choice, or by default, we will carve out a land legacy for our heirs. We can misuse the land and diminish the usefulness of resources, or we can create a world in which physical affluence and affluence of the spirit go hand in hand

Stewart Udall, *The Quiet Crisis*

clear that soil erosion is a problem affecting everyone — not just farmers. Discusses causes of and solutions to soil erosion. Ends by saying it is cheaper to prevent erosion than to clean up damage after it occurs.

Soil Erosion — The Work of Uncontrolled Water.

Soil Conservation Service, Education and Publications Branch, U.S. Department of Agriculture, Washington, D.C. 20250. GPO 0100-01550, 25¢.

Analyzes the process of soil erosion by water in the three stages. Discusses land slope and soil characteristics in the U.S. in terms of their implications for soil erosion.

Soil Surveys Can Help You. U.S. Department of Agriculture, Office of Communications, Room 104 A, Washington, D.C. 20250. Foldout, GPO 0100-02909.

TREES

ACTIVITIES

1. How to Make a Mini-Environment (terrarium) in the classroom. Visits to parks and nature centers teach little about an important aspect of the natural environment that deals with variation, ecological succession; i.e., the influence of time. It is important to be able to observe continually the "happenings" in the natural environment over a period of time.

Two places offer guidelines on making terrariums. The U.S. Department of the Interior published "Miniature Environments — An Environmental Education Guidebook," Government Printing Office, #908-688, 1970, 25¢; and the Environmental Education Task Force (under the U.S. Department of the Interior), 4228 Wisconsin Ave. NW., Washington, D.C. 20242, publishes a "how-to" leaflet on making and using a mini-environment. The National Wildlife Federation also published a series of articles dealing with methods of encouraging wildlife in your backyard. These articles tell how to make a larger mini-environment outdoors on which more people can enjoy. Reprints are available from the Federation. It would make a terrific project for classes of all ages.

2. "Learn To Love Trees" a Starter Kit. Contains a 25" x 35" color chart, a pamphlet of teaching suggestions, and a booklet of class projects. A four-week tree curriculum. Write to the American Forest Institute, 1619 Massachusetts Avenue, NW., Washington, D.C. 20036.
3. From *Environmental Discovery Series* — "Plant Puzzles," students exchange puzzles they've created and reconstruct them using branch structure and patterns. (Grades 1-6)

Learn to Love Trees.



They Will Love
You Back.

4. From *Environmental Discovery Series* — "Plants in the Classroom," students investigate interrelationships of plants and environment. (Grades 3-6)
5. From *Environmental Discovery Series* — "Oaks, Acorns, Climate and Squirrels," activities are designed to make students aware of interdependence in nature. (Grades 1-6)
6. From *Environmental Discovery Series* — "Nature Hunt," a trip to a local park to discover similarities and differences in the natural world. (Grades K-1 and Special Education)
7. Recycling Paper

Fill a mixing bowl $\frac{1}{4}$ full of water. Place $\frac{1}{2}$ page of a newspaper, torn into tiny pieces, in the bowl and let soak for at least 1 hour. After it becomes thoroughly soaked, beat it with an egg beater until broken: into fibers. The mix has been adequately beaten when it has the creamy texture of paper pulp. Dissolve 2

heaping Tablespoons of cornstarch in a pint of water. Pour into pulp and stir. Dip a 4" x 4" piece of window screen flat repeatedly into the pulp until a layer about $\frac{1}{8}$ " thick has accumulated. Set the pulp-covered screen on a newspaper and lay a plastic bag over it. Press down with a 2" x 3" wood block — gently at first, then with more pressure. Allow to dry about 24 hours. Peel the fibers, now paper, from the screen.

From — *Teaching Activities in Environmental Education* by John H. Wheatley and Herbert L. Coon. ERIC/SMEAC, the Ohio State University, 400 Lincoln Tower, 1800 Cannon Dr., Columbus, Ohio 43210.

8. *Trees From the Nation's History* is a tree-planting kit from the American Forestry Institute. It includes a booklet entitled *American Forest Heritage*, which tells of trees' importance in American history (as houses and other buildings, fences, conestoga wagons, boats, railroad ties, paper, etc.). Also includes packets of seeds that students can plant (Eastern White Pine, Loblolly Pine and Common Apple).

BOOKS

Cooper, Elizabeth K. *A Tree Is Something Wonderful*. San Francisco: Children's, 1972.

A children's book, available in most Montgomery County Public Libraries.

Guilcher, Jean Michel, and Noailles, R. H. *A Tree Is Born*. New York: Sterling Publishing Co., Inc., 1960.

A children's book, available in most Montgomery County Public Libraries.

Couchman, J. K., et. al. "Trees" from *Examining Your Environment*. Montreal: Holt, Rhinehart, and Winston of Canada, Ltd., 1972.

FILMS

Problems of Conservation: Forest and Range. (MCPS F-4664) 1969. J.S. 14 min. color.

Shows how large areas in the U.S. are used as productive forest and range land, and illustrates the multiple-use programs of protection and management that lead to effective use of resources. Points out the problem of retaining large undeveloped areas while demands for food, lumber, and recreation are increasing.

Science Conserves the Forest. (MCPS F-4270) 1965. P.J. 15 min. color.

In national forests, the forest rangers bring together many skills relating to science and management in research and work.

Temperature Deciduous Forest. (MCPS F-2658) 1961. J.S. 17 min. color.

Shows the seasons in the temperature deciduous forest. Pictures typical plants and animals in their natural environment, discussing their interrelationships.

The Tree on the Road to Turntown. (MCPS F-2559) 1962. P. 7 min. color.

Story of a mighty oak tree, from its beginning as an acorn dropped by a frightened squirrel to its final use as lumber. Shows some of the relationships among trees, animals, and man.

The Tropical Rain Forest. (MCPS F-2659) 1962. J.S. 17 min. color.

Defines the tropical rain forest and shows the principal characteristics and locations. Presents the way various forms of plant and animal life adapt and live together.

Try to say
TREES
without
smiling!



Why Plants Grow Where They Do. (MCPS F-4349) 1966. P. 11 min. color.

Pictures an open field, a woodland, a desert, and a pond; and explains why certain plants grow in each area. Shows each type of plant community set up in a glass vivarium.

Wildflowers. (MCPS F-5498) 1972. P. I. 11 min. color. Shows several kinds of wildflowers blooming in various locations and seasons, and explains that each wildflower is suited in some way to life in a particular place.

GUIDES AND CATALOGS

Film Catalog, 1972-73. State University of New York, College of Environmental Science and Forestry, Syracuse, N.Y. 13210.

Free Loan Forest Films — 16 mm sound-color, choice of 10.

Send for catalog description sheet. Modern Talking Picture Service, 2323 N. Hyde Park Road, New Hyde Park, N.Y. 11040.

Reference: American Forest Institute.



GAMES

Forest Adventure. (For Grades 4-8) for 5 players or 5 groups of players.

One of the five forest regions of the U.S. is assigned to each player. Each has a seedling which players must move up the trail leading to their region. (Moves are

determined by spinning disks.) Once they reach the region, the players spin a second disk to determine whether their seedling becomes a full-grown tree. If it does, the player spins a third disk in an attempt to recognize a commercial use for a tree. The first player to recognize two commercial uses wins.

For a more complete description, see: Environmental Education Games, Division of Health, Physical, and Environmental Education, Bureau of Academic and General Education, Pennsylvania Department of Education, Box 911, Harrisburg, Pennsylvania 17126.

Redwood Controversy. Houghton Mifflin, Multi-level. (Consult the publisher's catalog for a description.)

Why Are Leaves Green? Ecology Kit 1. Urban Systems, Multi-level. (Consult the publisher's catalog for a description.)

NEWSLETTERS*

"Environmental Vistas," Forest Service.

"The Green Scene," National Capital Parks.

"The Nature Conservancy News," Nature Conservancy.

ORGANIZATIONS*

The Wilderness Society.

American Forest Institute.

PERIODICALS*

American Forestry Association.

PUBLICATIONS

Plant a Tree. Educational Media and Technology, Departments of Curriculum and Instruction, and Environmental Education Division, Montgomery County Public Schools, 850 Hungerford Drive, Rockville, Maryland 20850.

A resource guide for the study of trees and plants.

*Refer to sections under these headings for addresses.

SPOTLIGHT American Forest Institute

The American Forest Institute is an organization supported by the forest products industry. Its purpose is to inform and educate the public on forestry and land management issues. It sponsors the Tree Farm System, which encourages small landowners to follow the good management practices that will insure a continuous supply of wood for the public use. Publications of AFI include:

Green America, a quarterly publication.

Forests USA, a report on size and status of American forests.

Recycling Questions and Answers, a look at the paper industry's effort to make best possible use of resource.

The American Tree Farm System, an introduction to the American Tree Farm System for woodlot owners.

For more information, write: American Forest Institute, 1619 Massachusetts Avenue, NW., Washington, D.C. 20036.

WILDLIFE ACTIVITIES

1. From *Environmental Discovery Series* — "Brine Shrimp and Their Habitat." (Grades 1-5)

Students experiment with conditions for hatching shrimp, and become aware of effects of environmental variables on the life cycle.

2. From *Environmental Discovery Series* — "Fish and Water Temperature." (Grades 4-9)

Children investigate how surroundings affect metabolism of fish and humans.

3. From *Teaching Activities in Environmental Education*, by John H. Wheatley and Herbert L. Coon — "Insect Cages." (Grades K-6)

Roll a 4" x 12" piece of screen into a cylinder. Fill a plastic coffee can lid with a thick mix of plaster of paris, and set one end of the cylinder in it; let it harden. This forms the bottom of the cage. Cover the top of the cage with the second coffee can lid and fasten it on one side with wire on string to form a hinge.



4. From *Teaching Activities in Environmental Education*, by John H. Wheatley and Herbert L. Coon — "Spiders' Webs." (Grades K-6)

Locate a spider web which is out in the open and can be approached from both sides. Spray the web with paint so that it is completely covered. Before paint dries, carefully press the paper onto the web. The paint will cause the web to stick to the paper. Can be used for decorations and to study how spiders make their webs.

5. National Wildlife Federation's "We Care About Wildlife" Kit Packet sent to teachers from NWF once a year for National Wildlife Week during March. Kits generally include a large, color poster expressing theme of the year, a reprint from NWF magazine on building mini-habitat (good activity for school grounds — all ages); and a teacher idea book with games, puzzles, and even a few serious learning activities.

BOOKS

Couchman, J. Kenneth, et al. "Small Creatures," from *Examining Your Environment*. Montreal: Holt, Rhinehart, and Winston of Canada, Ltd., 1974.

Cousteau, J. Y. *The Silent World*. New York: Pocket Books, 1955.

Crowe, Philip Kingsland. *World Wildlife — The Last Stand*. New York: Scribner, 1970.

Includes a foreword by H.R.H. Prince Bernhard of the Netherlands. The author reports on his travels as a director of the World Wildlife Fund to some of the world's most populated areas — Ceylon, Sikkim, Bhutan, Central America, Mexico, and southern Africa. In these places he observed the condition of rare and endangered species of wildlife and helped to develop interest in the preservation.

Curry-Lindahl, Kai. *Let Them Live — A Worldwide Survey of Animals Threatened with Extinction*. New York: Morrow, 1972.

Ehrenfeld, David W. *Conserving Life on Earth*. New York: Oxford, 1972. (Originally published as *Conservation*.)

Available in most Montgomery County Public Libraries.

Farb, Peter, and the editors of *Life*. *The Land & Wildlife of North America*. New York: Time, Inc., 1966.

An account "of the mammals and birds that were the original endowment of the country, of the history of how some have vanished and . . . of the efforts being made to preserve the vestiges of American wilderness that remain." (p. 16)

Fisher, James, et al. *Wildlife in Danger*. New York: Viking, 1969.

Based on facts collected by members and correspondents of Survival Service Commission of International Union for Conservation of Nature and Natural Resources. Available in most Montgomery County Public Libraries.

Fitter, Richard. *Vanishing Wild Animals of the World*. New York: Franklin Watts, 1969.

With 43 paintings by John Leigh-Pemberton, and a foreword by H.R.H. the Duke of Edinburgh, this book describes the work of wildlife conservation organizations. Also lists species that are extinct or on the endangered list.

MacBean, John C., et al. "Birds" from *Examining Your Environment*. Minneapolis, Minnesota: Mine Publications, Inc., 1971.

Olsen, John Edward. *Slaughter the Animals — Poison the Earth*. New York: Manner Books, 1974. Available in most Montgomery County Public Libraries.

Trippensee, R. E. *Wildlife Management — Upland Game and General Principles*. New York: McGraw-Hill, 1948.

FILMS

Animal Habitats. (MCPS F-1105) 1955. I.J. 11 min. Illustrates specific adaptations of animals to the varying conditions of life demanded by desert, forest, prairie, and arctic tundra.

Animal Homes. (MCPS F-0808) 1954. P. 11 min. Depicts the homes of various animals and shows that in each case the animal uses it to raise his young and to store food and for safety and shelter.



There are places where wild animals are protected. There are laws to protect others.

The Aquarium: Classroom Science. (MCPS F-5086) 1967. P.I.J.S. 12 min. color.

Shows that one can raise aquatic plants and animals by duplicating in an aquarium their natural conditions.

Big Land Animals of North America. (MCPS F-1016) 1956. P.I. 11 min.

Depicts the larger animals of North America in their native habitat.

The Changing Forest: A First Film. (MCPS F-5489) 1970. P.I. 11 min. color

Describes how trees and birds, insects, and other animals adjust to the changing seasons in the forest.

Common Animals of the Woods. (MCPS F-0963) 1943. P.J. 11 min. b&w.

Studies various common animals in the natural habitat. Pictures such animals as the squirrel, rabbit, raccoon, porcupine, otter, mink, and beaver.

Conserving Our Wildlife Today. (MCPS F-5025) 1968. P.I.J.S. 11 min. color.

Explains the importance and usefulness of wildlife; and describes methods used by government agencies, private societies, and individuals for wildlife conservation.

The Creek. (MCPS F-5220) J.H. 26 min.

An ecology film that shows in detail the physical structure and the life forms of the complex creek community. Depicts the social action involved in a community working together to preserve and reclaim its creek.

The Desert Community. (MCPS F-4410) 1965. P.J. 12 min.

A study of living things in the desert to discover their adaptations to accommodate the extremes of temperature and dryness.

Desert Dwellers: Plants and Animals. (MCPS F-4369) 1967. J.S. 21 min. color.

A study of desert ecology which shows how desert plants and animals adapt to their environment. Describes the living habits of the gila monster, ring-tailed cat, mule, deer, desert birds, snakes, and other animals.

Ecology of the Desert. (MCPS F-4518) 1967. J.S. 16 min.

Points out the location of the world's major deserts. Discusses limiting factors and illustrates adaptations of plants and animals that inhabit these arid regions.

Ecology of the Grassland. (MCPS F-4506) 1967. J.S. 14 min.

Points out the location of the world's major grasslands. Discusses limiting factors, and illustrates adaptations of plants and animals that inhabit these semi-arid regions.

Lakes: Aging and Pollution. (MCPS F-6107) 1971. J.S. 15 min. color.

Examines the organisms that inhabit lakes. Explains the aging process of lakes and emphasizes man's role in speeding and aging process.

Life in the Desert. (MCPS F-757) 1954. P.I.J.S. 11 min. Shows plant and animal life of the desert lands of our West. Shows that, despite outward appearances, the desert is really teeming with life.

Marine Ecology. (MCPS F-2425) 1961. S. 30 min. b&w. Points out some limiting factors that influence distribution of plants and animals in the ocean.

Nature in the City. (MCPS F-6071) 1971. P.I. 13 min. color.

Shows how small animals such as pigeons, house mice, spiders, and ants develop and adapt to their environment in the city. Points out that the interrelation of city trees, plants, and flowers with these animals forms an important part of the ecology of the city.

Nature's Half Acre. (MCPS F-948) 1953. P.I.J.S. 33 min. color.

Depicts the continuity of life in birds, plants, and insects through the four seasons. Shows the dramatic interdependence of one life upon another and nature's master plan providing food for all.

One Day at Teton Marsh. (MCPS F-4670) 1966. P.I.J.S. 48 min. color.

Follows the activities of otters during one day in Teton Marsh, showing views of the scenery and of the animals and birds.

The Physical Environment. (MCPS F-4295) 1963. P. 11 min. color.

Illustrates some of the ways in which organisms adapt to their environment. Offers examples of specific adaptations by organisms to particular physical factors in their environments.

Plant and Animal Distribution. (MCPS F-2422) S. 30 min.

Describes role of ecologist; defines population community and ecosystem, and discusses plant and animal distribution in regions with favorable survival conditions.

Plant-Animal Communities: Ecological Succession. (MCPS F-4824) 1967. J.S. 14 min. color.

Illustrates that ecological succession follows a predictable pattern, and the succession is controlled to a major extent by climate and landform; but it may also be accelerated, interrupted, and retarded by man.

The Sea. (MCPS F-4284) 1962. J.S. 26 min. color. Illustrates the interrelationships between living things in the sea.

GENERAL NATURE STUDIES

Seashore Life. (MCPS F-286) 1950. K.P. 11 min. color. Shows life on three kinds of seashore — sandy beach, rocky beach, and mud flats. Shows how seashore animals adapt to their environment.

Spring Comes to the Pond. (MCPS F-5810) 1970. I. 11 min. color.

Shows the changes which occur to a pond and its surroundings as spring approaches. Includes scenes of plants and animals, of ice melting approaches. Includes scenes of plants and animals, of ice melting, rains, insects appearing, and birds returning.

Still Waters. (MCPS F-5972) 1964. J.S. 14 min. color. A story of birth, survival, and death in a Florida lake. Follows fish in the lake as they feed, breed, and fight fishermen and predators.

The Strands Grow. (MCPS F-0585) 1950. J.S. 15 min. color.

Uses fossil remains to illustrate how changes in the environment may cause some animals and plants to die out and others to develop. Shows the growth of the climax forest to emphasize the significance of a state of balance.

A Time for Rain. (MCPS F-6010) 1971. P.I. 6 min. color. Shows effects of the sun on plants, animals, and a variety of materials.

The Tropical Rain Forest. (MCPS F-2659) 1962. J.S. 17 min. color.

Defines the tropical rain forest and shows the principal characteristics and locations. Presents the way various forms of plant and animal life adapt and live together.



"I THINK FRISBY IS DUE FOR A TRANSFER."

GAMES

Spec — Cat. (Specimens — Categories) This game was designed for 9th graders, but is adaptable to other levels. For teams of 4.

Teacher must first survey a given area to see which specimens are available. Using this information, the teacher makes up a bingo-type card with the difficult specimens on the diagonal lines and the rarest in the center. The four teams are each given a card, and they must find as many specimens as possible within a given time limit. They receive so many points for the squares covered. Highest score wins.

From: Environmental Education Games, Department of Health, Physical, and Conservation Education, Bureau of Academic and General Education, Pennsylvania Department of Education, Box 911, Harrisburg, Pennsylvania 17126.

NEWSLETTERS

"Conservation News," National Wildlife Federation.

"Conservation Report" National Wildlife Federation.

"Defenders of Wildlife News," Defenders of Wildlife.

"The Living Wilderness," Wilderness Society.

"Outdoor News Report," Wildlife Management Institute.

Ranger Rick's Nature Magazine, National Wildlife Federation.

"Watch It," Wilderness Watch.

"Wilderness Report," Wilderness Society.

ORGANIZATIONS

Defenders of Wildlife.

Izaak Walton League of America.

National Audubon Society.

National Wildlife Federation.

Wilderness Society.

Wildlife Management Institute.

SPOTLIGHT

National Wildlife Federation

Established in 1936, the National Wildlife Federation is one of the oldest environmental organizations in the United States. Its overall aim is to "... work for solutions to problems confronting man, wildlife, and the environment." To attain its goals, the Federation relies primarily on educating the public. Some of its publications include:

The International Wildlife Magazine.

National Wildlife Magazine.

Ranger Rick's Nature Magazine.

Conservation News.

Conservation Report.

Conservation Directory.

In addition, the Federation prints around 20 pamphlets that are available at an inexpensive cost after the first copy. NWF also publishes books on various topics having to do with the environment in general.

The Federation welcomes school groups that wish to visit its site at 8925 Leesburg Pike near Tyson's Corner, Virginia. There is a nature trail on the grounds — well worth the time it takes to walk it. The Center will provide a naturalist to lead the group; or teachers can lead the student in the "wilderness" themselves.

A general orientation room is open where students can see films, a mini-environment, a pictorial representation of milestones in environmental history, and an actual beehive in the making. Also in the building is a shop with many publications and many articles sold by NWF (stationery, jewelry, T-shirts, bird feeders, games, Eco-kits, etc.). Catalogs of these articles are available.

PERIODICALS

Audubon. (Audubon Society).

If you've never read the magazine *Audubon*, you've missed what many consider the most beautiful nature magazine in the world. It is the publication of the National Audubon Society, an organization that was struggling to save the environment before most present day environmental organizations were born. The Society sponsors wildlife sanctuaries, workshops, lectures on wildlife, court battles to save the environment, and so much more. Membership fees are \$7.00 for students, \$15.00 for teachers. Send checks to National Audubon Society, 950 Third Avenue, New York, N.Y. 10022. The subject of

environmental education is usually thought in terms of pollution problems and their solutions and nature studies, but anyone who has hiked along a lonely beach or strolled through a fragrant woods in the autumn is aware that such activities should also be included under the broad category of environmental education. Camping, hiking, backpacking, canoeing, and all other forms of outdoor recreation provide a combination of learning and fun unequalled for the student in any other division of environmental studies. By utilizing the environment around you for just plain fun, learning is bound to follow. If by some highly remote chance learning doesn't follow, be satisfied with the fun!

International Wildlife. (National Wildlife Society)

National Wildlife. (National Wildlife Society)

PUBLICATIONS

Wildlife Notes. Four series of papers on endangered wildlife, birdwatching, amazing facts, etc., published by the National Wildlife Federation. Each first set is free. Additional sets are 25¢ each.

Below is a copy of the order form for further publications of the National Wildlife Federation.

To Save The Earth		.10
Pesticides and Your Environment		.20
Special Report on Energy		.18
Wildlife Notes I		.25
Wildlife Notes II		.25
Wildlife Notes III		.25
Recycling		.15
Endangered Species		.05
Pesticides are Poisonous		.15
Wildlife of Farm & Field		.10
The Moss We're In		.15
Air Pollution		.15
Wildlife of Forest & Rangelands		.10
The Best Present of All		.18
Water		.15
Birds, Flowers & Trees of the U.S.		.02
Wildlife of Lakes, Streams, Marshes		.10
Estuary		.20
		*Discount \$
		Sub Total \$
Conservation Directory (1975)		
Item Number		
	Backyard Habitat*	—
79805	2 - 24 copies	.25
79814	25 - 49 copies	.15
		—
International Associate Memberships		\$ 7.50
National Associate Memberships		\$ 7.50
World Associate Memberships		\$12.50
National and International Magazines		
Ranger Rick's Nature Club		\$ 7.00
Foreign Postage, Per Membership		\$ 1.00
TOTAL AMOUNT ENCLOSED		\$

Items marked with an X are temporarily out of stock.

☐ Check here if you order items on Page 3A

Name _____

Address _____

City _____

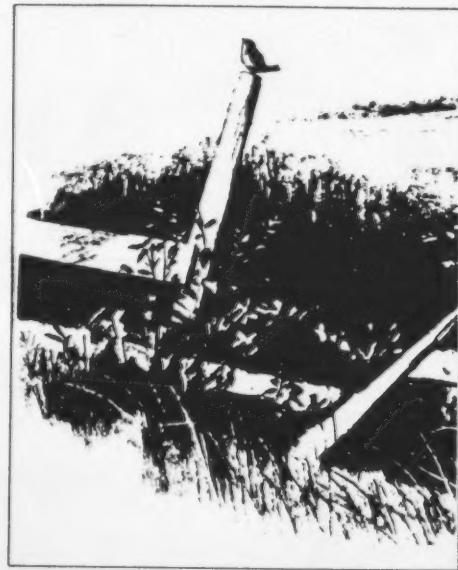
State _____

Zip _____

Age: ☐ over 21 ☐ under 21 ☐ Teacher

*Teachers, organizations and clubs are requested to place one order for quantity amounts of publications. A 20% discount may be granted on orders of 50 or more each for most of the publications. Purchaser is expected to pay shipping costs. The project or purpose for which the material is being ordered should be described briefly.

Send order and payment to:
EDUCATIONAL SERVICING SECTION, NATIONAL WILDLIFE FEDERATION
1412 SIXTEENTH STREET, N.W., WASHINGTON, D.C. 20036





The subject of environmental education is usually thought in terms of pollution problems and their solutions and nature studies, but anyone who has hiked along a lonely beach or strolled through a fragrant woods in the autumn is aware that such activities should also be included under the broad category of environmental education. Camping, hiking, backpacking, canoeing, and all other forms of outdoor recreation provide a combination of learning and fun unequalled for the student in any other division of environmental studies. By utilizing the environment around you for just plain fun, learning is bound to follow. If by some highly remote chance learning doesn't follow, be satisfied with the fun!

BOOKS

Angier, Bradford. *Home in Your Pack: The Modern Handbook of Back Packing*. New York: MacMillan, 1972.

Casewit, Curtis W. *Hiking-Climbing Handbook*. New York: Hawthorn Books, 1969.

Cheney, Theodore A. *Camping by Backpack and Canoe*. New York: Funk and Wagnalls, 1970.

Colwell, Robert. *Introduction to Foot Trails in America*. Harrisburg, Pa.: Stackpole, 1972.

Elman, Robert. *Hiker's Bible*. Garden City, N.Y.: Doubleday, 1973.

Fisher, Ronald M. *Appalachian Trail*. Washington: National Geographic Society, 1972.

Graves, Richard. *Bushcraft: A Serious Guide to Survival and Camping*. Schocken, 1972.

Petzoldt, Paul. *The Wilderness Handbook*. New York: W. W. Norton & Co., Inc., 1974.

Deals with wilderness survival, camping, mountaineering, and National Outdoor Leadership School.

Rutstrum, Calvin. *North American Canoe Country*. New York: Macmillan, 1965.

Van Matre, Steve. *Acclimatization*. Bradford Woods, Martinsville, Ind.: American Camping Association, 1972.

A sensory and conceptual approach to ecological involvement."

Van Matre, Steve. *Acclimatizing*. Bradford Woods, Martinsville, Ind.: American Camping Association, 1974.

'Sequel -to above book; a personal and reflective approach to a natural relationship."

MAP AND TRAIL GUIDE

Potomac Appalachian Trail Club, Inc. Washington, D.C.
**Guide to the Appalachian Trail and Side Trails
 in the Shenandoah National Park.** The Club,
 1970.

FILMS

The American Island. 28 1/2 minutes.

Among America's finest recreational resources are her islands, many of them near major cities. Examples are shown, and planning is urged to assure preservation against improper development. Order: Bureau of Outdoor Recreation, Radio-Television Liason Officer, Washington, D.C. 20240

Borrower pays for insurance and return postage. Make requests two months in advance.

The American Trail. 28 minutes.

Colorful depiction of how various kinds of trails are part of our national heritage — from concrete city canyons and parks to ski trails; bicycle trails along a river levee, trails for a canyon hiking, backpacking or strolling along a lonely seashore. Order: Bureau of Outdoor Recreation — address and terms of rental same as indicated above.

SPOTLIGHT

Environmental Recreation

The President's Environmental Merit Awards Program (PEMAP) is administered by the Environmental Protection Agency and has been expanded to include summer environmental education camps. Campers can win merit awards by participating in environmental projects and activities.

For further information: Summer PEMAP-A-107, Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460.

PERIODICALS

Wilderness Camping. Level — Ga, Ac, HS/Issue-B-M. Available in school and/or public libraries.

Backpacker. Available through subscription. Refer to periodicals list for further information and addresses.

NEWSLETTERS

"Mother Earth News"

"Sierra Club Bulletin"

ORGANIZATIONS

Appalachian Trail Conference

Association for Environmental and Outdoor Education

Sierra Club



GENERAL POLLUTION

BOOKS

These books are available in Montgomery County Public Libraries:

American Association for the Advancement of Science. Dallas, 1968. *Global Effects of Environmental Pollution: A Symposium*. New York: Reidel Publications, 1970.

Annual Report of the President's Council of Environmental Quality. Published every December. The report can be purchased at the Government Printing Office, stock number 4000-00327.

These are annual reports which contain articles dealing with the quality of the environment during the preceding year. These reports usually have excellent illustrations.

Commoner, Barry. *Closing Circle: Man, Nature, and Technology*. New York: Alfred A. Knopf, 1971.

Fortune Magazine Editors. *Environment: A National Mission for the Seventies*. New York: Harper-Row, 1970.

Hyde, Margaret Oldroyd. *For Pollution Fighters Only*. New York: McGraw, 1971.

Longgood, William Frank. *Darkening Land*. New York: Simon & Schuster, 1972.

Perry, John. *Our Polluted World: Can Man Survive?* New York: Franklin Watts, 1972.

Strobbe, Maurice A. (comp.). *Understanding Environmental Pollution*. St. Louis: Mosby, 1971.

These books are not available in Montgomery County Public Libraries:

Talbot, Allan R. *Power Along the Hudson: The Storm King Case and the Birth of Environmentalism*. New York: E.P. Dutton & Co., Inc., 1972. \$7.95.

A report on the 1965 fight between Consolidated Edison and the environmentalist coalition that wanted to block construction of a hydroelectric plant on Storm King Mountain.

Wallick, Franklin. *The American Worker: An Endangered Species*. New York: Ballantine, 1972.

Reveals the workplace environment where pollution "frequently exceeds the pollution which befalls our cities."

FILMS

No Deposit — No Return. (MCPS F-6081) 1971. J.S. 10 min. color.

Edward Morgan, Buffy Sainte Marie, Mark Van Doren, and Kim Hunter portray their conceptions of America and discuss the way of life and future prospects for the country. Scenes of natural splendor in the country are juxtaposed with scenes of our defilement of the environment.

Time of Man. (MCPS F-4831) 1970. J.S. 50 min. color. Explains how civilization and our technological progress are polluting the natural environment which is essential for the survival of living beings. Shows many species which have disappeared.

Valley of Darkness. 1970-Rental: \$10.

This 18-minute color film is an honest, simple, and profoundly disturbing demonstration of the destruction wreaked upon the people and land of Appalachia by coal mining. More than just a day in the life of a miner, through revealing interviews of miners and industry spokesmen it tells of black lung disease, hearing loss, and heart ailments that turn miners old and feeble in their 40's and 50's. Order: NBC Educational Enterprises, 30 Rockefeller Plaza, New York, N.Y. 10020.

GAMES AND KITS

Environmental Pollution. (11th-12th grade level) 6 filmstrips, Ward's Natural Science, Catalogue Number 70 W 3800.

Pollution. (Game) 10th-12th grade level, Carolina Biological, Catalogue number 45-1416.

Pollution. (Packet) Exotech Systems, Inc.

Pollution. (Game) Multi-level, Houghton-Mifflin. Consult your librarian for publishers' catalogues that describe the above games.

Re-Con. (Game) Whole class may participate.

Citizens of a depressed mining community must decide between two industries for their town — one that will help employment and use coal but will pollute the air and river, and one that will employ only half as many workers and runs on electricity but will not pollute the environment. Students are assigned roles, and, as the character assigned, must vote for the company he/she thinks that character would support. From: Environmental Educational Games, Division of Health, Physical and Conservation Education, Bureau of General and Academic Education, Pennsylvania Department of Education, Box 911, Harrisburg, Pennsylvania 17126.

NEWSLETTERS

"The Best Economically and Technologically Feasible Newsletter," Minnesota Pollution Control Agency

"Catalyst for Environment Quality"

"Earth, I Care Newsletter," Earth Awareness Foundation

"Environment Facts," U.S. Environmental Protection Agency

"Environment News," U.S. Environmental Protection Agency

"EPA Citizens' Bulletin," U.S. Environmental Protection Agency

"Environment Reporter," Bureau of National Affairs, Inc.

"Environment Action Bulletin"

"Sierra Club Bulletin," Sierra Club

"World Environment Newsletter," International Institute for Environmental Affairs

ORGANIZATIONS

Central Atlantic Environment Service

Crusade for a Cleaner Environment

Environmental Action

Environmental Defense Fund

Environmental Education Planning Committee for the District of Columbia

International Association for Pollution Control

League of Women Voters of the U.S.

Public Interest Research Group (Ralph Nader's Group)

PERIODICALS

Periodicals dealing with POLLUTION are included in the individual subcategories; e.g., air pollution, water pollution, solid waste, etc.

PUBLICATIONS

Action for Environmental Quality — Standards and Enforcement for Air and Water Pollution Control. This 24-page EPA booklet can be purchased at the Government Printing Office, GPO stock #5500-00087. Price 90¢.

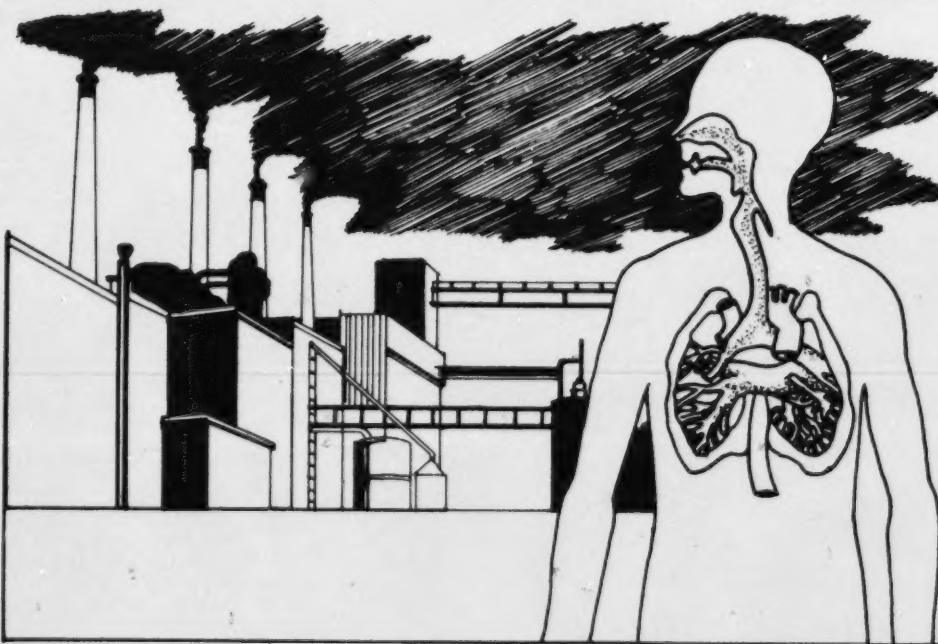
Clean Air and Water. A 13-page pamphlet published by the Getty Oil Company.

It describes the air and water pollution controls instituted by the Getty Company at its Delaware Refinery. Write: Getty Oil Company (Eastern Operations), Inc., Delaware Refinery, New Castle County, Delaware.

Environment Packet. Pamphlet #426, price \$2.00. 6 publications on how our rivers, air, and estuaries have become so polluted and why our solid wastes keep accumulating. League of Women Voters of the U.S., 1730 M Street, NW., Washington, D.C. 20036.

Your World, My World. 1973, Stock #5500-00079, price \$1.50.

This 48-page EPA booklet is a colorful and interesting general treatment of pollution: air, water, waste, noise, chemical, and radiation. Suitable for Grades 7-9. Order: Government Printing Office.



AIR

BOOKS

Aylesworth, Thomas G. **This Vital Air, This Vital Water: Man's Environmental Crisis.** Chicago: Rand McNally, rev. ed. 1974.

Brief chapters on such topics as "Solids in the Air," "Smokestacks and Automobiles," "Filth in the Sea," "Sewage Pollution," and "Paying for Pure Water."

FILMS

Air Pollution: A First Film. MCPS F-5497.

Shows how everyone is responsible for air pollution, and how one can share in correcting pollution problems.

Problems of Conservation: Air. 1968 — Rental: \$8. A 15-minute color film that presents a depressing picture of belching factory smokestacks and auto expressways. The film was made before the EPA's recent air pollution abatement programs were begun. Order: Encyclopaedia Britannica Educational Corp., 425 N. Michigan Avenue, Chicago, Illinois 60611.

Something in the Air. 1972 — Rental: free loan. This color, 28-minute film holds the internal combustion engine responsible for the largest part of air pollution. Order: Modern Talking Picture Service, Inc. 2323 New Hyde Park Road, New Hyde Park, N.Y. 11040.

Runaround. 1969 — Rental: free loan. A color, animated, 17-minute film in which the hero confronts major polluters in a vain attempt to solve air pollution. Order: National Tuberculosis and Respiratory Disease Association, 1740 Broadway, New York, N.Y. 10019

GAMES AND KITS

Game — Air Pollution. Urban Systems, Inc. Designed for "multi-level" play. For a description of the game, ask your librarian for the publisher's catalog.

Smog Game. 7-9 grade levels, Carolina Biological, 45-1418.

For a description of "Smog Game," consult your librarian for the publisher's catalog.

Smog. Houghton Mifflin, Multi-level. For a description of this game, see your librarian for the publisher's catalog.

Kit — Air and Water Pollution. Scott Education Division. Price \$45.00.

This kit contains a transparency, 2 filmstrips, and a cassette tape. For description ask your librarian for a publisher's catalog.

Kit. Air Pollution. Schloat Products. (For Grades 7-9). For a description of this filmstrip-cassette kit, ask your librarian for the publisher's catalogue.

NEWSLETTERS

"Air Pollution Notes," Rutgers University

"Newsletter," Metropolitan Washington Coalition for Clean Air, Inc.

GENERAL POLLUTION

ORGANIZATIONS

Air Pollution Control Association

Citizens for Clean Air

National Council of the Paper Industry for Air and Stream Improvement

(See General Organization list for more information.)

PERIODICALS

Clean Air. National Society for Clean Air.
Refer to Periodicals list for more information.

PUBLICATIONS

Clean Air and Your Car. A 24-page booklet from EPA.
Write: Environmental Protection Agency, Public Information Center (Pm-215), Eaterside Mall, 401 M Street, SW., Washington, D.C. 20460.

Testing for Air Pollution. Science Study Aid No. 5, Classroom activity aid pamphlet, U.S. Department of Agriculture, Educational Services Branch, Agricultural Research Center, Beltsville, Maryland 20705.



WATER

ACTIVITIES

1. From National Wildlife Federation, *Environmental Discovery Units: "Snow & Ice."* Children conduct investigations to learn characteristics and qualities of snow and ice. (Grades 1-6).
2. From National Wildlife Federation, *Environmental Discovery Units: "Stream Profiles."* Students study a stream and draw correlations between its elevations and organisms and the conditions at those elevations. (Grades 4-9)

INSTRUCTIONAL MATERIALS

Environmental Resource Papers in the "Investigating Your Environment" Program, Book 8. Menlo Park, Ca.: Addison-Wesley Publishing Company, 1975.

BOOKS

The Yearbook of Agriculture, 1955. Water. U.S. Department of Agriculture. o.p.

CURRICULA

"A Curriculum Activities Guide to Water Quality Equipment and Environmental Studies." ERIC #ED 080361 (See section on curriculum guides.)

"Water Quality Control." ERIC #ED 079100 (See section on curriculum guides.)

FILMS

Conquering the Sea. (MCPS F-4489) J.S. 25 min. color. Discusses man's growing interest in the ocean as a source of food and raw materials, and shows the new techniques that are being developed to permit such underwater exploration.

Ecology of Fresh Water. (MCPS F-4508) 1967. J.S. 16 min.

A discussion of fresh-water ecology. Illustrates some of the characteristics pertaining to the formation, the zonation, stratification and classification of lakes. Explains phyto-plankton blooms and limiting factors in lakes.

The Gifts. 1972 — Rental: free loan.

This 28-minute color film was made by the Federal Water Quality Administration, which was merged into the EPA in 1970. It is an excellent portrayal of how America has abused the gift of water. Film was nominated for an Academy Award. Order: Modern Talking Picture Service, Inc., 2323 New Hyde Park Road, New Hyde Park, N.Y. 11040.

Life Along the Waterways. (MCPS F-370) 1952. P.I. 11 min. color.

Shows the variety of environmental conditions in a changing waterway. Includes scenes of animal and plant life found in streams, ponds, rivers, and marshes.

Man's Problem. (MCPS F-583) 1953. J.S. 18 min. color. Demonstrates our dependence on an adequate supply of water. Describes our growing water shortage and outlines steps to be followed in making water available for our increasing population and expanding industry.

Oil Spoil! 1972 — Rental: free loan.

This 17-minute color Sierra Club film deals with automobile-related pollution and particularly with the spoiling of coastlines. The 1969 oil spill at Santa Barbara

highlights the film. Order: Association-Sterling Films, 866 3rd Avenue, New York, N.Y. 10022.

The Pond and the City. (MCPS F-4266) 1965. P.J. 16 min. color.

Creates awareness that our resources are not unlimited and focuses attention on the need to overcome these problems in our society today. Suggests conservation as the answer to the problems of resource waste.

The Problem with Water is People. (MCPS F-4521) 1964. J.S. 30 min. color.

Examines the crisis in the nation's most vital natural resource — water. Follows the course of the Colorado River from the Rockies to Baja, California and points out the uses and abuses of the water supply.

Problems of Conservation: Water. (MCPS F-4660) 1969. J.S. 16 min. color.

Describes communities and localities which have water supply problems, and shows the pollution of the Great Lakes.

Renaissance of a River. (MCPS F-4783) 1965. S. 20 min. color.

A documentary film about the Susquehanna River basin, showing its problems and its promise. Includes a discussion of the Interstate Federal Water Resources Compact for the Susquehanna.

Restless Sea. (MCPS F-2186) 1964. P.I., J.S. 59 min. color.

A study of various aspects of the sea — waves and tides, marine life, the nature of the ocean bottom, and an analysis of sea water.

The River: A First Film. (MCPS F-5113) 1969. P.I., J. 10 min.

Describes how rivers are formed and how they are used by cities along their banks.

Water for All Living Things. (MCPS F-4104) 1967. P. 9 min. color.

Discusses sources of fresh water, methods of transportation, and storage of water and new scientific experiments that will add to our future water supply.

Water Resources Development. (MCPS F-4371) 1968. I.J. 14 min.

Geographical features of Colorado River, water resource for southwest U.S. and dams as sources of electric power and irrigation.

The Water Says. (MCPS F-5540) 1971. P. 11 min. color. Presents the sights and sounds of cascades and still water to help understand and discover nature.

Wild River. (MCPS F-4307) 1965. P. 14 min. color. Depicts the beauty of wild river regions. Explains the value of rivers for recreation, as havens for wildlife, and as water supplies for towns.

The Year of Disaster. 1971 — Rental: free loan.

This 28-minute color film examines the water resources of seven American cities that have at one time come precariously close to a "year of disaster" — when either too much or too little water has threatened to destroy the city. The message is that careful planning and use can prevent drought or flood. Order: Modern Talking Picture Service, Inc., 2323 New Hyde Park Road, New Hyde Park, N.Y. 11040.

GAMES

Dirty Water, the Pollution Game. For 2-4 players, ages 12-adult.

Each player (called a Commissioner of Water Pollution) starts with his/her own lake and \$100. The object of the game is to be the first player to stock a lake but at the same time control water pollution. Acquaints students with the problems faced by administrators in controlling water pollution. Urban Systems, Inc., 1970, 1033 Massachusetts Avenue, Cambridge, Massachusetts 02138.

Life in the Water: Ecology Kit 2. Vendor: Urban Systems. Multi-level.

Ask your librarian for a publisher's catalog.

NEWSLETTERS

"Highlights," Water Pollution Control Federation

"Institute for Research on Land and Water Resources Newsletter," Pennsylvania State University

"Potomac Basin Reporter," Interstate Commission on the Potomac River Basin

"The Chesapeake Bay Foundation," The Chesapeake Bay Foundation, Inc.

For more information see the Newsletter section.

ORGANIZATIONS

Association of State and Interstate Water Pollution Control Administrators

Chesapeake Bay Foundation, Inc.

Interstate Commission on the Potomac River Basin

Association of State and Interstate Water Control Administrators

Water Pollution Control Federation

SPOTLIGHT

Izaak Walton League and S.O.S.

The Izaak Walton League of America has initiated a nationwide environmental program called *Save Our Streams — Adopt One*. S.O.S. is an on-going citizen participation program in which a local group or club pledges to "adopt" a stream and to care for it. Lions Clubs, Kiwanis, garden clubs, church groups, and school clubs are examples of participating groups. Once the group has adopted a stream, it then begins the task of carefully surveying the stream and correcting its problems. Mrs. Alice Linkins, member of Maryland Division of Izaak Walton League, says: "It's an excellent program in that citizens get actively involved in environmental improvement and they can see the results of their labors."

S.O.S. suggests that a school's science or environment club "adopt" a section of a nearby stream — perhaps half a mile — and then link up with other organizations that have pledged to care for other parts of the same stream. Thus, a "watershed coalition" could be formed.

How do you go about getting into S.O.S.? Write or Call: The Izaak Walton League of America, SAVE OUR STREAMS COORDINATOR, 1800 North Kent Street, Suite 806, Arlington, Virginia 22209, Phone: (703) 528-1818.

The organization will send you an S.O.S. "Action Guide and Project Ideas" Sheet along with stream survey forms, in their S.O.S. Citizen Action Kit. Information could also probably be obtained from Izaak Walton League's Maryland Division at 6700 Needwood Road, Derwood, Maryland. IWLA's Maryland Division Newsletter, "The Maryland Waltonian" is available from the same address. Four issues yearly.

PERIODICALS

Chesapeake Bay. Chesapeake Bay Communication.

PUBLICATIONS

Toward Cleaner Water: The New Permit Program to Control Water Pollution. Stock #5501-00703. Price \$50¢.

A 32-page EPA booklet "outlining the conditions under which discharge permits are granted to such polluters as"

GENERAL POLLUTION

factories, power plants, sewage treatment plants, and animal feedlots; and describing the role of citizens in the implementation of the program." Order from Government Printing Office.

A Primer on Waste Water Treatment. EPA booklet from the Water Quality Office. Revised March, 1971. For sale by U.S. Government Printing Office. 25 pages.

NOISE ACTIVITIES

Kinds of Noises

- Sounds have certain properties that can be measured — for example, loudness, pitch, and regularity. The higher the decibel rate, the higher the pitch or the more irregular the sound.
- Tape record a variety of sounds from different sources on a recorder. Play them for the students.
- Ask the students to try to identify the sounds.
- Discuss which ones you consider noise. Why?
- List sounds that you consider pleasant and those you find annoying.

Reducing Sound

- Attach a buzzer or bell to a 6-volt battery with wires so that it will produce a steady sound. Place on a table.
- Listen to it ring for 2 minutes.
- Place a layer of sponge between the bell and table. Listen to the loudness of sound now, and compare it with the loudness of the sound when the sponge was not used. Was the sound reduced? Why?
- Ask a gas station mechanic how a muffler works on a car.
- Ask the building services manager whether acoustical tiles are used in the school and why.

Taken from *A Better Place to Be*, part of the Johnny Horizon Program of the U.S. Department of the Interior.

BOOK

Kerback, Matthew J. **Noise and Hearing.** Arlington, Virginia: Output Systems Corporation, n.d.

FILMS

Noise: Polluting the Environment. 1971 — Rental: \$9.00.

A 16-minute color film that presents convincing evidence that prolonged exposure to rock music and other noise pollutants can adversely affect hearing. Order: Encyclopaedia Britannica Educational Corporation, 425 N. Michigan Avenue, Chicago, Illinois 60611.

Noise Pollution. (MCPS F-6093) 1972. J.S. 18 min. color.

Demonstrates the nature of sound and noise and points out the difference between them. Examines the effects of noise pollution on the ear and on psychological health. Studies how the atmosphere affects the propagation of sound.



Noise: The New Pollutant. 1967 — Rental: \$6.75.

A 30-minute color film produced for N.E.T. It surveys all the standard sources of unpleasant noise and demonstrates methods of measuring decibel output. Order: Indiana University Audio-Visual Center, Bloomington, Indiana 47401.

Noise. (MCPS F-5295) 1970. P.I. 10 min. color.

Discusses the difference between sound and noise. Explores the effects of noise on the individual, and indicates ways to control noise pollution.

The Quiet Racket. 1966 — Rental: \$12.50. 7 min. color.

A hilarious movie about a young man's unsuccessful efforts to escape the din of the city. Order: National Film Board of Canada, 680 5th Avenue, New York, N.Y. 10019.

ORGANIZATIONS

Citizens Against Noise, 2729 East Lunt Avenue, Chicago, Illinois 60645

Citizens for a Quieter City, Box 777, F.D.R. Station, New York, N.Y. 10022

PUBLICATIONS

Highlights — The Noise Control Act of 1972.

A 4-page booklet detailing the EPA's strategy for reducing noise levels under the Noise Control Act of 1972. Write EPA Public Information Center (PM-215), 401 M Street, SW, Washington, D.C. 20460.

Noise From Heavy Construction. Stock #5500-00075. Price 25¢.

A 6-page leaflet from EPA which can be purchased from Government Printing Office.

Noise Pollution — Now Hear This. Stock #5500-0072. Price 25¢.

A 16-page EPA booklet discussing the dynamics, sources, and effects of noise and steps that can be taken to alleviate the problem. Government Printing Office.

The Harmful Intruder — Noise in the Home. #5500-00074. Price 25¢.

A 6-page EPA leaflet which can be purchased from the Government Printing Office.

CHEMICAL AND BIOLOGICAL CONTAMINATION BOOKS

Carson, Rachel. **Silent Spring.** Boston: Houghton-Mifflin, 1962.

Graham, Frank. **Since Silent Spring.** Boston: Houghton-Mifflin, 1970.

Harmer, Ruth Mulvey. **Unfit for Human Consumption.** Greenwood Cliffs, N.J.: Prentice-Hall Press, 1971.

McMillen, Wheeler. **Bugs or People.** New York: Appleton Century Crofts Co., 1965.

from The Conservation Foundation Letter (July 1973)

LEAD—THE "HIDDEN CURSE" OF THE GHETTO

Inner-city lead is everywhere. It comes from automotive emissions, from lead-based paint, and from the water which in older buildings often runs through lead pipes. Environmental writer Daniel Zwerdling points out (in *The Progressive*, January, 1973) that such plumbing produces 46 times as much lead as in the suburbs where the pipes are galvanized iron or copper. What does lead from waterpipes, tailpipes, and paint chips do? "Inorganic lead," says a 1971 EPA report, "is thoroughly implicated as a causative agent in decreased hemoglobin synthesis, liver and kidney damage, mental retardation in children, and in abnormalities of fertility and pregnancy."

Moreover, EPA explains, children are more susceptible to lead poisoning, which leads to encephalopathy and brain damage. "One study disclosed that 200 normal children had blood levels of 14 to 30 micrograms per 100

grams of blood while 100 mentally defective children showed 40 to 80 micrograms per 100 grams of blood." Says a United Auto Workers pamphlet ominously: "Five per cent of the children who eat lead paint die, 40 per cent of the survivors suffer permanent brain damage."

To make matters worse, lead poisoning manifests itself more easily among persons with a hereditary susceptibility to sickle-cell anemia, a disease that occurs almost exclusively among blacks.

Lead is one of EPA Urban Affairs Director Carol Thomas's high-priority items. "We suspect that a lot of 'slowness' in inner-city kids may be attributable to lead in the system." Also, he has no patience with the assertion that the only culprit is lead-based paint, as the Ethyl Corporation would like EPA to believe. Some of his research shows that lead poisoning is highest in the summer, when children are outside

breathing in auto exhausts rather than inside eating paint chips. Lead from exhausts not only permeates the air, Thomas says, but settles on the ground, accumulating in the unswept streets. "A kid can drop a sucker, and put it in his mouth, and he has ingested a significant quantity of lead."

Nonetheless, the Urban Environment Conference is bearing down on the newly enacted Lead Paint Poisoning Prevention Act. They want to make sure that sufficient funding is provided to operate effective screening, treatment, and educational programs in urban "lead-belts", to develop standards that will (1) "validly measure the level of lead in paint already present on the walls," (2) enforce the removal of the hazard, and (3) provide permanent protection by regulating the amount of lead used in paint manufacture. Warns the UEC: "The mere existence of a statute does not insure the achievement of its goals."

Waste Disposal by Hydraulic Fracturing. 1966, free loan.

Wastes are mixed with cement as they pass through a series of pipes, and are finally injected into a fracture in a horizontal shale formation below the earth's surface. This movie will best serve technical or advanced classroom audiences. Order: Same address as above, General Services Administration.

Who Shall Reap. 1969, free loan.*

The film contrasts the primitive pest control methods still in use in many parts of the world with sophisticated modern control technology. Specific focuses include current research efforts to develop safer methods of protecting food, fiber, and forests from pests to meet the needs of an exploding world population. Order: Audio Visual Services — University of Maryland, Room 1, Annapolis Hall, College Park, Maryland 20742.

*Note: Borrower pays for insurance, return postage, and handling. Make requests at least three months in advance.

NEWSLETTERS

"Chesapeake Bay Foundation Newsletter." Chesapeake Bay Foundation, Inc. Environment Facts" and "Environment News" — Environmental Protection Agency.

Note: There are several newsletters listed in the Newsletters section that deal generally with the environment issues of which might have information on chemical and biological contamination.

ORGANIZATIONS

Almost every environmental organization has devoted part of its actions to improving public and government awareness of the chemical and biological dilemma. The following organizations are at the forefront of the field. For additional information, addresses, and organizations, check the Organizations section.

Chesapeake Bay Foundation, Inc.
Concern, Inc.
Environmental Action
The Garden Club of America
League of Women Voters of the United States
Maryland Environmental Trust
Rachel Carson Trust for the Living Environment

FILMS

Man's Effect on the Environment. (MCPS F-5298) BFA 1970, J.S. 14 min. color.

This film shows some of the effects of our exploitation of natural resources and raises questions as to the quality of life such environmental changes might provide.

The following films are either free on loan or low priced rentals.

The Epidemiology of Pesticide Poisonings. 1969, free loan.

Information-packed lecture on epidemiological methodology employed to trace the sources of pesticide poisonings. Two hair-raising case studies follow that are bound to raise questions about the effects of these agents on human health. Order: General Services Administration, National Archives and Records Service, National Audiovisual Center, Washington, D.C. 20409.

Safety in Salt: The Transportation, Handling, and Disposal of Radio-Active Waste. 1971, free loan.

The film is about the saga of AEC's 15-year search for a burial ground for its radioactive wastes. Abandoned salt mines in the town of Lyons, Kansas are chosen; and the movie documents the controversy surrounding the action. Order: Same address as above — GSA.

Two for Fox, Two for Crow. 1972, free loan.

One of the largest pesticide companies in the country presents a different point of view in the battle against chemical contamination. The rigidity of government regulations and the safety of pesticides used according to directions are stressed. The film avoids mentioning any controversial pesticides such as DDT, and is therefore quite one-sided. Order: Association — Sterling Films, 866 3rd Avenue, New York, N.Y. 10023.

PERIODICALS

Available in school and/or public libraries:

Environment. Level — HS, Sa/Issue — M-10 (none in June and August).

Environmental Science and Technology. Level — Sa, Ac/Issue-M.

Note: There are several magazines listed in the Periodicals section that often have articles on chemical and biological contamination but are not exclusively devoted to the subject.

PUBLICATIONS

A Guide to Pest Control, by Dennis Puleston, 1974. Environment Defense Fund, East Setauket, Long Island, N.Y. 11733.

Available from: Moriches Bay Audubon Society, Box 802, Center Moriches, Long Island, N.Y. 11934.

Pesticides and Your Environment: A Guide for the Homeowner and Home Gardener, by John Cary Stone, 1972.

Available from: National Wildlife Federation, 1412 Sixteenth Street, NW., Washington, D.C. 20036. Single copies free, multiple copies — 25¢.

Pesticides Registration: How It Protects You, Your Family, and the Environment. 9 pages, illustrated. Pamphlet describes the two laws under which EPA requires registration of pesticides. Two pages list six steps that the household user should take in avoiding accidents in the application of pesticides. Available from: Environmental Protection Agency, Waterside Mall, 401 M Street, SW., Washington, D.C. 20460.

Pesticides: What Are They? What Do They Do? Reprint from May-June 1971 issue of *Ranger Rick's Nature Magazine*.

Available from: National Wildlife Federation, 1412 Sixteenth Street, NW., Washington, D.C. 20036. Single copies free; multiple copies, 15¢.

SOLID WASTE

ACTIVITIES

1. Create a situation in which a subcommittee of the state legislature has been designated to write legislation to prohibit use of non-returnable beverage bottles. Divide students into different groups such as supermarket owners, bottle and can manufacturers, landfill operators, ecologists, and "concerned citizens," to act as lobbyists who will prepare a 3-5 minute presentation of their views to a 5-7 member subcommittee. The student subcommittee should have the opportunity to question lobbyists. In a subsequent session, the subcommittee meets in front of the class to draw up the proposed bill. Follow with a discussion on the "fairness" of the bill, arguments of the different lobbyists, and expression of personal opinions. From: **Teaching Activities in Environmental Education** by John H. Wheatley and Herbert L. Coon, ERIC/SMEAC.

BOOKS

Environmental Resource Papers in the "Investigating Your Environment" Book V. Menlo Park, California: Addison-Wesley Publishing Company, 1975.

A 57-page anthology containing 13 articles on a high school level.

CURRICULA

A Curriculum Activities Guide to Solid Waste and Environmental Studies. ERIC #ED 080348 (See section on Instructional Guides)

FILMS

Burn, Bury or What? (MCPS F-5960) 1970. J.S. 19 min. color.

Describes how the District of Columbia has begun to address the problem of solid waste disposal by developing a long-range plan. Illustrates how other cities can solve solid waste disposal problems by using a sanitary landfill, accomplished through the use of the latest engineering techniques.

Cycles. 1972 — free loan.

This 13-minute color film surveys the solid waste problem and the methods currently employed to reclaim and reuse

metal and glass refuse. Order: Association-Sterling Films, 866 3rd Avenue, New York, N.Y. 10022.

The Great All-American Trash Can. 1971 — free loan.

A 13-minute color film on the problems and possibilities of recycling bottles. Order: Commonwealth Film Distributors, 1440 S. State College Boulevard, Building 6-K, Anaheim, California 92806.

Recycling. (MCPS F-5958)

A 21-minute color film which shows existing techniques for recovering materials from solid waste and describes the newly developed equipment and systems. 1971.

Steel — The Recycled Material. 1972 — free loan.

A 10-minute color film on the problems and possibilities of recycling steel. Order: Association-Sterling Films, 866 3rd Avenue, New York, N.Y. 10022.

Trash to Kilowatts. (MCPS F-5726) J.S. 10 min. color. Shows an experimental plant of processing solid waste into reusable scrap iron and burnable trash for generation of electricity.

NEWSLETTERS

"Earthworm News," Recycling Revolution Cooperative

"Litter Bits of News & Facts," Crusade for a Cleaner Environment

ORGANIZATIONS

Crusade for a Cleaner Environment

Environmental Technology Seminar

League of Women Voters of the U.S.

Recycling Revolution Cooperative

PERIODICALS

Available in schools or public libraries:

American City Magazine

City

Environmental Science and Technology

SPOTLIGHT National Center for Resource Recovery, Inc.

National Center for Resource Recovery, Inc.
1711 Connecticut Avenue, NW
Washington, D.C. 20036

The NCRRI publishes a wide range of material on solid waste issues including an "Information Kit" containing fact sheets and a 12-page pamphlet called "Let's Talk Trash."

PUBLICATIONS

Recycle? League of Women Voters Education Fund, 1730 M Street, NW., Washington, D.C. 20036.

Publication #132. 75¢ a copy, quantity rates. 1972.

An excellent 39-page pamphlet introducing senior-high-level students to the issues and options in solid waste disposal and resource recovery. Four page bibliography.

Another pamphlet published by the League of Women Voters Education Fund is **More?** Publication #104. 1972. 44 pages, 75¢ explores the interfaces between population, economic growth, and the environment" as these pertain to solid waste recovery policies.

Solid Waste Management — Recycling and the Consumer.

This 12-page EPA booklet "Provides an overview of the problems of recycling consumer waste and the feasibility of the proposed solutions." Write: EPA, Public Information Center (PM-215), Waterside Mall, 401 M Street, SW., Washington, D.C. 20460.

Let's Dump the Dump — The ABC's of Solid Waste Management.

This 16-page EPA booklet, written for elementary students, introduces concepts of solid waste management. Write: EPA, Public Information Center (PM-215), Waterside Mall, 401 M Street, SW., Washington, D.C. 20460.

There Lived a Wicked Dragon. Stock #5502-00106, price 70¢.

This 31-page EPA coloring book tells a story "about a dragon which feeds on pollution and grows large enough to threaten a nearby village until the people in the village develop a waste management system." Order from Government Printing Office.

Mission 5000-A Citizens' Solid Waste Management Project. Stock #5502-0087, price 50¢.

Describes the EPA's plan to eliminate the open dump and to replace it with modern solid waste handling facilities. Order this 16-page booklet from the Government Printing Office.

Energy Recovery From Waste. Stock #5502-00116, Price: 45¢.

A 16-page EPA booklet that discusses the recovery of energy by burning shredded residential solid waste as supplementary fuel in boiler furnaces. Order from Government Printing Office.



ACTIVITIES

1. From *Environmental Discovery Series*, "The Rise and Fall of a Yeast Community."

Acquaints students with formation and use of a population curve, helping them see how it is affected by environmental factors. Great introduction for general study of population. (Grades 6-9)

2. From *Energy and Man's Environment Activity Guide*.

Arrange students equidistant from one another all over the room. After 3 minutes, discuss their reactions to occupying space allotted. Then have all of them move into half the room, and after three minutes, discuss reactions. Keep halving the available space until about 2 square feet per student is reached. Discuss the problem of congestion due to overpopulation.

BOOKS

Bird, Caroline. *Crowding Syndrome: Learning to Live With Too Much and Too Many*. New York: McKay, 1971.

Available in most Montgomery County Public Libraries.

Brown, Harrison Scott, and Hutchings, Jr., Edward. *Are Our Descendants Doomed: Technological Change and Population Growth*. New York: Viking, 1972.

Proceedings of a population conference held at California Institute of Technology. Available at most Montgomery County Public Libraries.

Drummond, A. H. *Population Puzzle — Overcrowding and Stress Among Animals and Men*. Reading, Mass.: Addison-Wesley, 1973.

Ehrlich, Paul R. *The Population Bomb*. New York: Ballantine Books, Inc., 1975.

Pushes need for population controls. Talks of "man's inalienable rights —

- to eat
- to have decent, uncrowded shelter
- to enjoy natural beauty
- to avoid pesticide poisoning
- to have freedom from thermonuclear wars
- to limit families
- to have grandchildren."

(Recommended in *Whole Earth Epilog*, and available in MCPS and Montgomery County Public Libraries.)

Fraser, Dean. *People Problem, What You Should Know About Growing Population and Vanishing Resources*. Bloomington, Ind.: Indiana University Press, 1971.

Available in most Montgomery County Public Libraries.

Hazen, William E. *Readings in Population and Community Ecology*, 3rd. ed. Philadelphia: W.B. Saunders Co., 1975.

Hellman, Harold. *Population*. Philadelphia: Lippincott, 1972.

Children's book. Available in most Montgomery County Public Libraries.

Hyde, Margaret Oldroyd. *This Crowded Planet*. New York: McGraw, 1961.

Available in most Montgomery County Public Libraries.

Pringle, Laurence P. *One Earth, Many People — The Challenge of Human Population Growth*. New York: MacMillan, 1971.

Available in Montgomery County Public Libraries.

CURRICULUM GUIDES

A Curriculum Activities Guide to Population and Environmental Studies. ERIC #ED 080349.

(See section on general curriculum guides.)

Population. Environmental Ecological Education Project. ERIC #ED 098072.

(See section on Instructional Guides)

FILMS

Challenge to Mankind. (MCPS F-2234) 1960. S. 29 min. b&w.

A panel of experts from around the world discusses the crises in world population and food supply.

House of Man, Part II: Our Crowded Environment. (MCPS F-4770) 1969. J.S. 11 min. color.

Discusses the problems that have resulted from the population explosion of the 20th century, including housing and food shortages, poverty, pollution, industrial waste, and exploitation of natural resources.

Population Ecology. (MCPS F-4153) 1966. S. 19 min. color.

Analyzes the effects of environment as they relate to surplus or decline of births over deaths.

Standing Room Only. (MCPS F-4574) 1967. J.S. 25 min.

Discusses population explosion.

GAMES

Population. A game of man & society. (for 2-6 players, ages 12 to adult).

Deals with the planet Celestra, a small planet much like Earth, with a very simple life style. The people support themselves by farming, but technology is on the rise. With lowering death rates, the prospect of a population explosion is becoming greater. The object is to avoid the explosion.

Each player begins with a small country, limited money, a small population, and agriculture adequate to feed the population. The student must acquire resources to develop his/her country to its fullest potential possible and control growth so that the population doesn't outgrow the country's limits of space and resources. From: Urban Systems, Inc., 1033 Massachusetts Avenue, Cambridge, Massachusetts. 02138

NEWSLETTERS

"Population Bulletin," Population Reference Bureau.

ORGANIZATIONS

Planned Parenthood — World Population, 515 Madison Avenue, New York, N.Y. 10022

Population Reference Bureau, 1755 Massachusetts Avenue, NW., Washington, D.C. 20036. Phone: 232-2288

Zero Population Growth, 1346 Connecticut Avenue, NW., Washington, D.C. 20036. Phone: 785-0100

The Population Council, 245 Park Avenue, New York, N.Y. 10017

Population Crisis Committee, 1835 K Street, NW., Washington, D.C., Phone: 659-1833

The Population Institute, 110 Maryland Avenue, NE., Washington, D.C., Phone: 544-2202 (Student & Youth Division: 544-3310)

PUBLICATIONS

The Birth Rate & Population Growth in the U.S.
Government Printing Office, Stock #1746-0008, price 15¢

Food/People: The Troublesome Equation. Stock #550, price 35¢

Pamphlet put out by the League of Women Voters. February 1975.

The Interfaces Between Population Economic Growth and the Environment. 1972, Stock #104, price 75¢ (44 pp.)

A pamphlet put out by the League of Women Voters that outlines the relationships among population, environment, employment, renewable and nonrenewable resources, and national and regional economic development. Concerns for urban development, transportation, land use policy, and national growth also.

Population and the American Future. The Report of the Commission on Population Growth and the American future. New American Library (Signet Special), New York. 1972. Public Affairs Pamphlet #503 of same title, by Elizabeth Ogg, with summary of above. 1974.

Population Challenge, What it Means to America.
Put out by U.S. Department of the Interior, Government Printing Office, 1966.

From: **The Population Council.**

a) Series of reports ("Reports on Population/Family Planning," "Governmental Statements on Population: An Inventory," "Population Growth and Economic Welfare," "Population Pressures on Families: Family

Size and Child Spacing") available in English, French, and (selected issues in) Spanish.

b) **Current Publications in Population/Family Planning** (a bi-monthly bibliography with abstracts of selected articles and books.)

c) **Studies in Family Planning** (monthly publication with articles on a wide range of topics related to population and family planning. Available in English, French, and Spanish.) Write: Information Office — The Population Council Back issues and bulk orders for educational purposes available.

Population Profiles. A series of 14 or more units, plus extras for the study of demography. Edited by Townsen Scudder. Produced by the Center for Information on America (a nonprofit, educational corp.), Box C. Washington, Conn. 06793.

Series:

This Crowded World. (Grades 4-6) 1970.

People! (Grades 7-9) 1968.

The World Population. (Grades 10-12) 1972. By Population Reference Bureau. Published by Columbia Books, Inc. Price \$2.

Projection Highlights. Put out by National Planning Association, 1606 New Hampshire Avenue, NW., Washington, D.C. 20009. Phone: 265-7685.

Economical Projections Membership in NPA of \$30 per year (tax deductible) includes subscription to **Projection Highlights.**

Where Shall They Live? Booklet by James L. Sundquist, 1969. Order from: The Brookings Institution, 1775 Massachusetts Avenue, NW., Washington, D.C. 20036. 1-4 copies free; 5-10 copies \$1; over 10 copies, 10¢ each.

World Population and a Global Emergency. Booklet by Thomas W. Wilson, Jr., put out by Aspen Institute for Humanistic Studies, Program in Environmental and Quality of Life, 1755 Massachusetts Avenue, NW., Washington, D.C. 20036.

World Population Estimates. 1974 (chart). The Environmental Fund, 1302 18th Street, NW., Washington, D.C. 20036. Phone: 293-2548.

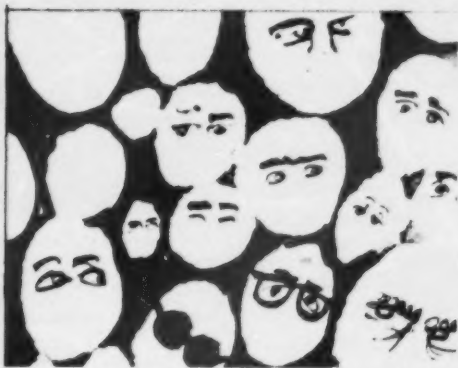
MAPS

World Population Growth Pattern. 1972, Stock #0324-00580.

World Fertility Pattern. 1972, Stock #0324-00579.

World Mortality Pattern. 1972, Stock #0324-00581.

These maps are available at the Government Printing Office, Washington, D.C. Write Superintendent of Documents, price 25¢.



SOLAR SCHOOLHOUSE

During the Truman administration, an executive office report estimated that about 40 percent of the energy needs for heating homes in the United States could be met by solar energy. That report was written in the late 1940's. If its recommendations had been followed, solar technology would have reached high gear by 1965, which means we probably could have avoided the energy crunch we are faced with today. But, alas, as a nation we took the route of expediency: we chose oil. We chose the Arab boycott and all the ominous political and economic nightmares that went with it after our own petroleum reserves gave out. We then chose nuclear power upon the realization that even the vast black pools of araby were finite, despite grave dangers of nuclear waste and nuclear proliferation.

However, right here in Montgomery County, vocational students of several MCPS high schools, under the direction of some staff people in the divisions of Construction Trades and Environmental Education, have constructed a solar schoolhouse on the grounds of the Lathrop E. Smith Environmental Education Center. This is the first public building in Montgomery County to be heated by the sun!

The solar schoolhouse measures 28' by 32' and is of brick veneer construction. It has a bank of 9 solar collectors on the south-facing roof, which, thanks to common glass, will provide 72 per cent of the structure's heat load. The incoming rays of the sun (which are always short wave) penetrate the glass and are changed to long wave radiation after striking the copper. Glass does not permit passage of the long wave radiation. This causes heat build-up on the copper. The heat, in turn, is carried away by water flowing through small tubes in the panel. The heated water is pumped through radiators to heat the house. A 500-gallon tank in the basement stores hot water for nights and cloudy days. It sounds simple; but it takes numerous pumps, valves, thermostats, and plumbing to keep it working.

The solar schoolhouse will serve as a demonstration model for the school system and community. An interpretive educational program is planned which will explain the construction and operation of the structure. Both teachers and students are encouraged to visit the solar schoolhouse. To arrange a visit, contact the Director, Lathrop E. Smith Environmental Education Center.



ACTIVITIES

Energy & Man's Environment. Activity Guide. This general guide is divided into six different aspects of Energy with objectives and activities listed. Lists appropriate grade levels. Thomas F. Ris (ed.), University of Washington, 2121 Fifth Avenue, Seattle, Washington 98121.

BOOKS

Foreman, Harry (ed.). **Nuclear Power and the Public.** Minneapolis: University of Minnesota Press, 1970.

Garvey, Gerald. **Energy, Ecology, Economy: A Framework for Environmental Policy.** New York: W.W. Norton & Co., 1972.

Holdren, John, and Herrera, Philip. **Energy, A Crisis in Power.** New York: Sierra Club, 1971.

A scientist examines the sources and effects of energy production, and a journalist reports on the efforts of individuals and groups to protect the environment.

FILMS

Conservation of Energy. (MCPS F-1598) 1961. S. 27 min. b&w.

Traces energy from coal to electrical output in a large power plant, showing how quantitative data is taken in the plant. Demonstrates the law of conservation for random and orderly motion.

Energy — Choices, Options, Decisions. (MCPS F-6438) 1974. J.S. 15 min. color.

Energy: Less is More. (MCPS F-6385) 1974. J.S. 20 min. color.

Energy: New Sources. (MCPS F-6384) 1974. J.S. 20 min. color.

Energy: The Dilemma. (MCPS F-6321) 1974. J.S. 20 min. color.

What's the Energy Crisis All About? (MCPS F-6323) 1974. I.J.S. 25 min. color.

The Energy Challenge. (MCPS F-6072) 1973. J.S. 25 min. color.

Discusses the limitations of present energy resources to meet the growing need for power in the U.S. and shows how the modern world is dependent on the supply of oil from the Middle East. Examines future power sources, and demonstrates how we can conserve energy.

Energy Crisis. (MCPS F-5683) 1972. J.S. 13 min. color. Reviews the different energy sources, and indicates their limitations in meeting our growing needs. Shows the possibility of solutions and developments which some day may provide unlimited power.

Energy From the Sun. (MCPS F-2448) 1963. J.S. 16 min. color.

Shows our dependence upon sun's energy and indicates the ways in which direct energy can be utilized.

Energy From the Sun. (MCPS F-805) 1955. J.S. 11 min. b&w.

Illustrates the importance of the sun as the earth's major source of energy. Shows how solar energy is transmitted through space, utilized by people and plants, and stored for future use.

Prudhoe Bay — Or Bust! 1970, 30 min. color — Rental: \$11.50.

This film examines the possible ecological repercussions resulting from construction of the Alaska oil pipeline. The fact that the pipeline was begun in 1974 makes the film even more valuable as a classroom aid. Order: Indiana University Audio-Visual Center, Bloomington, Indiana 47401.

GAMES

EEG, The Energy Environment Game. Developed by Creative Studies, Inc., Boston, Massachusetts. Copyright, 1973. Edison Electric Institute, 90 Park Avenue, New York, N.Y. 10016.

"An educational simulation for science, social studies, and English classes in Grades 7-12. Through a series of meetings, students consider society's demand for energy, its potential impact on the environment, and possible trade-offs." Guides, filmstrip and record, rolecards, simulation aids, maps and references.

PEPCO's Educational Services provides these games to teachers and schools in the PEPCO service area. Contact : Public Information Department, Potomac Electric Power Company, 1900 Pennsylvania Avenue, NW., Washington, D.C. 20006.

BOOKS

Flaun, Peter Tyrell. *Environmental Geology; Conservation, Land Use Planning, and Resource Management*. New York: Harper, 1970

Reilly, William K. (ed.) *The Use of Land: A Citizen's Policy Guide to Urban Growth*. New York: Thomas Y. Crowell, 1973.

U.S.D.A. *The Yearbook of Agriculture, 1958*. Land. Washington, D.C.: United States Department of Agriculture, 1958.

CURRICULA

The Development of a Subdivision Within the Parkway School District. ERIC #ED 099210 (See section on Instructional Guides.)

This Land Is Your Land. The Problem of Land Utilization. ERIC #ED 099210 (See section on Instructional Guides)

FILMS

The Desert and Man. (MCPS F-5340) 1968. P.I. 10 min. color.

Describes how a barren wasteland can be transformed into a productive area. Points out that man has learned to live in harmony with nature rather than trying to fight it.

Grapes of Wrath. (MCPS F-6133) 115 min.

The classic film of John Steinbeck's novel, starring Henry Fonda, filmed in the late 1930's. The story begins with the Joad family being forced off their farm in the Dust Bowl of Oklahoma, and traces the Joads into the "Okie" migrant picker camps of California's Great Valley. The first part of the film does an excellent job of relating human misery to land misuse.

Grasslands Ecology — Habitats and Change. (MCPS F-6080) I,J,S. 13 min. color.

Analyzes the ways in which fire, flood, drought, and animals have changed the American prairies. Examines our role in changing the prairies.

The Great Plains: Land of Risk. (MCPS F-4408) P,J. 15 min. color.

Follows the movements of the ranchers and farmers who settled the plains in the 1860's and faced constant threats from drought, dust, and wind.



Man Makes a Desert. 1964, 10 min. color — Rental: \$6.50.

Traces the process by which ranchers and farmers made a desert out of the Southwest's once-rich pasture land. Order: BFA Educational Media, 2211 Michigan Avenue, Santa Monica, California 90404.

No Room for Wilderness? 1968, 26 min. color — Rental: free loan.

A beautiful Sierra Club film depicting the once-lush South African wilderness that was civilized into oblivion. Strong contrasts between the wilderness as it was and the later destruction of the ecological balance after Europeans brought sheep, cattle, and the prickly pear cactus. Order: Association-Sterling Films, 866 3rd Avenue, New York, N.Y. 10022.

GAMES

The Airport Game. One of the Urban Design Games developed by San Antonio City Edges, 1974, supported by a grant from National Endowment for the Arts. Students assume they are members of a San Antonio City Council Advisory Task Force. With the use of a map and overlays, they must study five proposed sites for a new municipal airport and decide which is best suited. Copyright by Citizens for a Better Environment, Inc. and La Mancha Group, Inc.



INSTRUCTIONAL MATERIALS

Environmental Resource Papers in the "Investigating Your Environment" Program. Book 8. Menlo Park, Ca.: Addison-Wesley Publishing Company, 1975.

This is a learning module dealing with various environmental issues and problems.

NEWSLETTERS

"Institute for Research on Land and Water Resources Newsletter," Institute for Research on Land and Water Resources.

"Man and Resources," Canadian Council of Resources and Environmental Ministers.

"The ORV (Off Road Vehicle) Monitor," Environmental Defense Fund.

"Potomac Basin Reporter," Interstate Commission on the Potomac River Basin.

ORGANIZATIONS

American Forest Institute

Environmental Data Service (EDS)

Environic Foundation International

Friends of the Earth

Institute for Research on Land and Water Resources
(Penn State University, University Park, Pennsylvania 16802)

(The above organization is not in the General Organization list)

Izaak Walton League of America

Maryland Environmental Trust

Sierra Club

Tundra Ecosystem Research Program

The Wilderness Society

PERIODICALS

The following can be found in school and public libraries:

Environment. Scientists' Institute for Public Information.

See the Periodicals List for the addresses of the following periodicals for subscriptions

Landscape Architecture.

The Journal of Environmental Education. Dembar Educational Research Services, Inc.



environmental facts

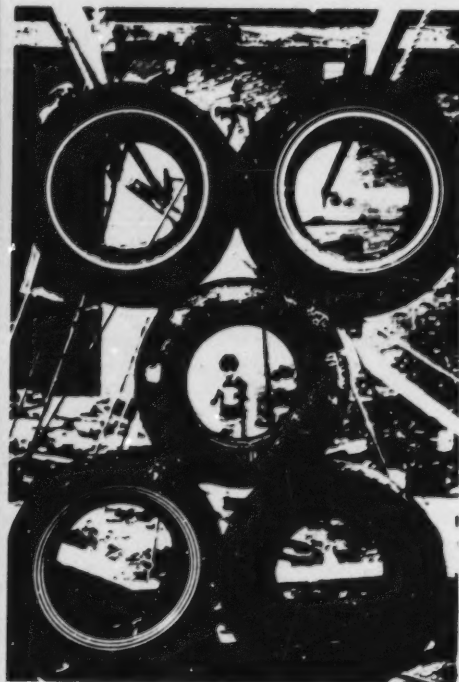
LAND USE

Like all advanced nations, the United States is using land more extensively than ever before. Certain kinds of land resources are becoming scarce--land within a reasonable distance of urban centers available for housing, recreation and waste disposition; land within cities that can be used for transportation networks, parks and open space; and land to accommodate commercial facilities, housing and centers of higher education. At the same time we must conserve valuable farm land in order to provide food, feed and fiber for our still expanding population and world markets.

Our intensive and consumptive use of the land is expected to escalate dramatically in the next 27 years. In fact, all that has been built in the history of this Nation may have to be duplicated. That is, the equivalent of every school, pipeline, power-plant, office building, airport, shopping center, factory, home and highway that has been built during our first 200 years may have to be matched to accommodate population and market demands projected for the year 2000.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY • WASHINGTON, D.C. 20460

URBAN ECOLOGY AND DESIGN



BOOKS

Arango, Jorge. *The Urbanization of the Earth*. Boston: Beacon Press, 1970.

Banfield, Edward C. *The Unheavenly City Revisited: A Revision of the Unheavenly City*. Boston: Little, Brown and Co., 1974.

Barnett, Jonathan. *Urban Design as Public Policy: Practical Methods for Improving Cities*. New York: McGraw-Hill, 1974.

Ewald, W.R. *Environment and Change*. Bloomington: Indiana University Press, 1968.

Gill, Don, and Bonnett, Penelope. *Nature in the Urban Landscape: A Study of City Ecosystems*. Baltimore: York Press, 1973.

Goodman, Robert. *After the Planners*. New York: Simon and Schuster, 1971.

McHarg, Ian. *Design with Nature*. Garden City, New York: Natural History Press, 1969.

Moore, Gary T. (ed.). *Emerging Methods in Environmental Design and Planning*. Cambridge: MIT Press, 1970.

Robinson, Albert J. *Economics and New Towns: A Comparative Study of the United States, the United Kingdom, and Australia*. New York: Praeger Press, 1975.

Rudofsky, Bernard. *Streets for People*. Garden City, N.Y.: Doubleday, 1969.

Schmertz, Mildred. (ed.). *Acquisition, Conservation, Creation, and Design of Open Space for People*. Washington, D.C.: The American Institute of Architects, 1973.

Book obtainable from AIA, 1735 New York Avenue, Washington, D.C. 20006.

Shoman, Joseph James. *Open Land for Urban America: Acquisition, Safekeeping, and Use*. Baltimore: The Johns Hopkins Press, 1971.

Smith, James Noel. (ed.). *Environmental Quality and Social Justice in Urban America*. Washington: The Conservation Foundation, 1974.

Vosburgh, John. *Living with Your Land*. New York: Scribners, Inc., 1972.

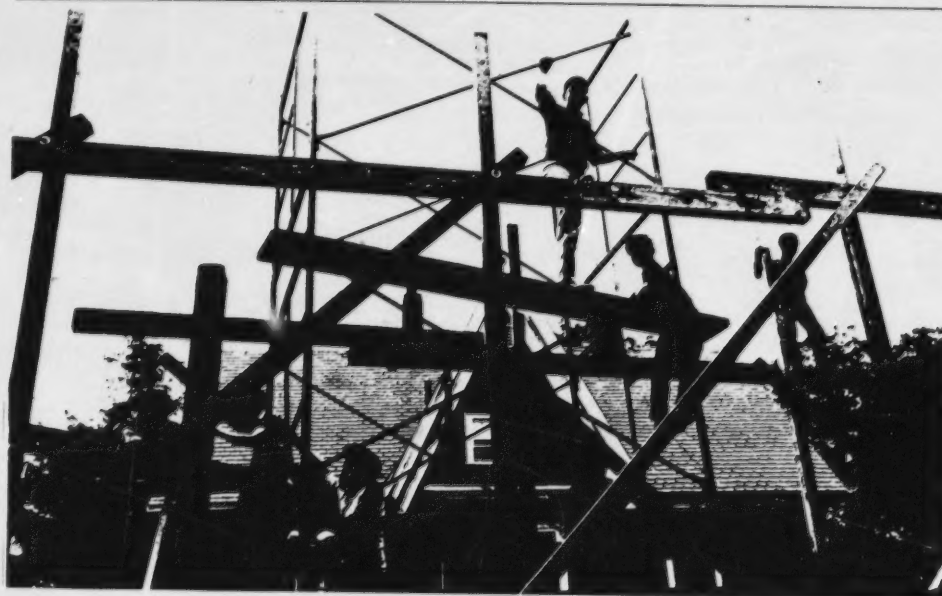
Whyte, William H. *The Last Landscape*. Garden City, N.Y.: Doubleday Books, 1968.

INSTRUCTIONAL GUIDES

Project Quest — Quality Urban Environmental Studies Training. ERIC #ED 099240.

Student Action for the Valley Environment (SAVE). ERIC #081601.

Note: For additional information on these instructional guides and other general environmental education topics, refer to Instructional Guides.



FILMS

A Land Betrayed. (MCPS F-4672) 1967. P.I.J.S. 10 min. color.

Points out the growing defacement of America, showing the importance of the individual in keeping America beautiful. Also examines the efforts of some organizations and local and federal governments to solve this problem.

Boomsville. (MCPS F-5252) 1970. J.S. 11 min. color. Shows our interaction with our surroundings, tracing how we took a virgin land and made it a frantic congested "boomsville."

Cities and History: Changing the City. (MCPS F-4523) 1967. P. 8 min. color.

Discusses some of the reasons for change in city neighborhoods and show that change can mean both improvement and decay. Illustrates how city planning can affect the deterioration or growth of a neighborhood.

How to Look at a City. (MCPS F-4768) 1964. S. 30 min. b&w.

Eugene Raskin paints a word portrait of New York and discusses the fundamental standards used by architects and by planners to judge the quality of a city's neighborhood — human scale, density, and variety.

The following films have been recommended by the Environmental Information Center and are either free loan or low priced rentals. The Center's comments have been annotated.

Three Cures for a Sick City. 1964 — Rental: \$6.75.

This film is a look at three approaches to the problems of the urban environment in Washington, D.C. Georgetown is examined in depth, from its redevelopment from an elegant area to a semi-slum in the 1930's to an expensive, chic area of town. Southwest Washington, on the other hand, exemplifies the bulldozer approach. The entire area was razed, dislocating the low income residents, to make way for high income apartments and townhouses. In the third story, the residents of Adams-Morgan formed their own urban renewal plan; but urban renewal funds were denied, leaving the area to deteriorate. Order: National Bank of Detroit, Public Relations Department, 611 Woodward, Detroit, Michigan 48232.

Pandora's Easy Open Pop Top Box. 1967 — Free loan. Also available through MCPS F-4761.

The contrast between country and urban areas is spotlighted in this film, with the varying images and sounds of each presented without narration. Naturally, the urban area come out the worse in the comparison; but the filmmakers, the U.S. Public Health Service, are hopeful that health and well-being can be brought to presently blighted urban areas. The photography and

sound mix are excellent. Order: General Services Administration, National Archives and Records Service, National Audiovisual Center, Washington, D.C. 20409.

The Pedestrian Strikes Back. 1967 — Rental: \$5.

An Account of the success of pedestrian malls in one of the most car-loving areas in the world — Southern California. The malls are compared to some in Europe, and the increased pedestrian and business traffic is related. Order: Portland Cement Association, Old Orchard Road, Skokie, Illinois 60076.

Time to Begin. 1970 — Rental: \$8.

A hearty invective against the visual assaults that Americans are subjected to every day. The film rapidly cuts back and forth between these aesthetic disasters and a tour of Virginia's highways, villages, and cities. The effect is dizzying but the argument against visual pollution is well made. Order: The Colonial Williamsburg Foundation, Drawer C, Williamsburg, Virginia 23185.

PEOPLE'S PARKS

We have witnessed in this country the emergence in the last few years of spontaneous, popular, action-oriented, ecology-conscious people's groups. Many of these have turned their activist efforts toward the creation of so-called "people's parks." This is not surprising, because open space, in the full meaning of the word "open," should be a natural locus for the expression of spontaneous and imaginative action.

Consider one of New York City's people's parks — The Park — built under the sponsorship of a group called Environment. A small piece of vacant land in an area called Hell's Kitchen, it was used until recently for, among other things, stripping stolen cars. Now it is a park. It includes space for more traditional functions — grass and benches for sitting and a paved area for basketball. It all shows imaginative use of common materials as substitutes for expensive playground equipment: cable spools stacked to create a climbing tower, a treehouse with a cargo net instead of a ladder and a baker's vat for a wading pool. It was built with volunteer labor.

Hard hats and long-haired youths worked on it. It is now used by them and by kids and older people from the neighborhood. The creation of people's parks is an expression of a desire to reclaim from established bureaucracies a function many feel these institutions no longer perform adequately — providing open space to meet the needs of a vital, diverse and dynamic urban population.

CONVENTIONAL WISDOM NO LONGER WORKS

As designers, we all accept the goal of serving human needs as an established objective of open-space design, but in practice we often have defined these needs rather narrowly as recreation, conservation or beautification. We also have done

little to define other human values that can be served by open space and therefore have been unable to specifically design open spaces to satisfy these values.

Consider the conventional open-space planning process. It begins with an analysis of the existing population, its numbers and its grouping into neighborhoods bounded by natural or man-made features. Then, to these numbers and groupings, standards are applied relating to fairly conventional, mostly recreational activities: so many basketball courts or acres of land for planning. Open space, to be useful, particularly on a frequent basis — daily or weekly — must be accessible to the potential user. A network of small spaces, developed as an integral part of the urban fabric, is more useful to the center-city ghetto dweller than the kind of large regional park which is available only to those with automobiles. A network of circulation for driving, walking or cycling is the essential factor in opening the space up to potential users. Opposition to the location of highways through open space is widespread; yet, intelligently located and regulated highways can serve to open the space up to potential users. The significance of accessibility to open-space planning requires the careful design of the edges of open space as they meet the urban fabric. These edges are important not only because their design will make the space more open, visible and accessible, but also because their location, close to urban users, often will make them the most frequently used. Open space must be physically, psychologically and socially accessible. A person should feel that the space is close, easily reached and free of danger or social barriers. We can increase the accessibility of open space and extend the choice of activities by pairing spaces and facilities. Open meadows next to deep woods or play areas next to picnic tables allow members of the same group to enjoy different activities.

SUMMING UP

We need to free ourselves from the stereotyped way in which we define open space. We must design open space in conjunction with the circulation systems and the living and working areas of the city, not in antithesis to them. Open space is not negative space, i.e., the antithesis of development, but an integral part of the city's environment and daily life. As designers, we must look to the people and work with them so that we can proceed to design, knowing who will use the space, how he will get to it and what will be available to him once he gets there. Having by this means established the pattern of use, we can then develop the form and the character of the open space as a complete subsystem closely related to all the other subsystems in the urban area. It is not enough, as often has been done in the past, to color a map green.

GOVERNMENT AND PUBLIC ASPECT

BOOKS

Bernarde, M.A. *Our Precarious Habitat*. New York: W.W. Norton and Co., 1973.

Cooley, Richard A., and Wandesforde-Smith, Geoffrey. (eds.). *Congress and the Environment*. Seattle, Washington: University of Washington Press, 1970.

Congress responded very slowly to the wishes of a great majority of the American public. A redwood national park did not become a reality until over seventy years after it was first proposed. Should changes be made in the American political system to make government more responsive and effective in its efforts to restore or preserve a quality environment? If an apparent majority of Americans agree that some old-growth redwoods should be preserved in a national park, what criteria can be used to determine the correct number of acres to include? At what point do all the costs of an additional acre exactly balance all the possible social benefits to be gained from preservation of that acre? For that matter, how can one measure the costs and benefits of a scenic or recreational resource?

Our present political system is inept at weighing local interest and well-being on the one hand, and the national interest on the other hand, in conservation matters. Certainly we do not want a tyranny of the majority, the economic interests of a local area or special-interest group must be considered. But this can not be to the exclusion of all other considerations. The case of the redwood national park controversy illustrates this major limitation to existing methods of decision making. Many congressmen are simply unable to weigh the long-term aesthetic and ecological implications of national park legislation because their constituencies exert heavy and constant pressures upon them to deliver more tangible benefits. Thus, short-term economic considerations often have the advantage over aesthetics and ecology.

In the context of current conservation politics, this problem is particularly pressing. If, as a nation, we fail in our efforts to save masterpieces of nature, in most cases we will not have that opportunity later. If we do not save the giant redwoods now, we will not have another chance until perhaps the year 2500. The emphasis on the possibly adverse effects on the economy in the fight to save the redwoods is disturbing. It is disturbing because it suggests the inability, or at least the unwillingness, of Congress to deal explicitly and directly with some central political issues.

Mitchell, John., and Stallings, Constance L. (eds.). *Ecotactics: The Sierra Club Handbook for Environmental Activists*. New York: Simon & Schuster, 1970.

Nader, Ralph, and Ross, Donald. *Action for a Change: A Student's Manual for Public Interest Organizing*. (rev. ed.). New York: Grossman Publishers, 1972.

MODEL STATEMENT OF PURPOSE AND OBJECTIVES

...PIRG will undertake to identify and evaluate issues involving public policy decisions, including social planning, institutional regulation and control, and matters of individual rights which affect substantial numbers of people. ...PIRG will determine the alternative solutions available, in order to determine what course of action ...PIRG should take to bring about corporate, governmental, and other institutional changes that are necessary to further the public interest.

Action taken by ...PIRG will consist of a coordinated effort of analysis and research; public education; active representation before legislative bodies and before administrative and regulatory agencies; and litigation—where such actions are warranted—to achieve the goals of this group. It will not become involved in internal campus disputes or disputes between campuses.

The general areas of ...PIRG concern will include consumer protection, resource planning, occupational safety, protection of natural areas and environmental quality, racial and sexual discrimination, landlord/tenant relations, delivery of health care, freedom of information in government, and similar matters of urgent or long-range concern to the welfare of the people of the State of

HOW TO ORGANIZE

MODEL TIMETABLE*

1st Week Introduction of the student PIRG plan to students on various campuses throughout the state or region. At the end of the first week, state or regional meeting to bring schools together to discuss the need for a PIRG, the necessity for unity, and the strategy for the statewide or regional effort.

2nd Week Explanation of the PIRG plan to students on all campuses by news articles and other media. Development of core groups on each campus not contacted during the first week.

3rd Week Second state or regional meeting. Initial phase of outlining specific PIRG model and proposal. Drafting of petition and design of new publicity.

4th and 5th Weeks More intense effort to notify students of the effort under way. Low-key publicity campaign, intensifying and climaxing with accent on the upcoming petition campaign. Third state or regional meeting.

6th Week Petition drive.

7th and 8th Weeks Completion of petition drive with greater than 50 percent support in each school. Fourth state or regional meeting. Development of strategy to be used in approaching governing boards.

9th Week Beginning of negotiations for administration approval; the length of time negotiations last depends on who has to be negotiated with.

FILM

The following films, recommended by the Environmental Information Center, are free loan or low priced rentals.

A Question of Values. 1972 — Free loan.

Illustrates an intense public debate in a small Maine town torn by conflict between environmental preservation and economic development. A New York oil company wants to build a modern oil refinery in Maine, and crude oil would be provided by 200,000 ton tankers. Huge oil spills could wipe out lobstering, fishing, and the tourist-based economy of the area. But there is high unemployment in the area, and the refinery would bring jobs and attract satellite industries. The Maine people involved have taken sides because they know their future could be at stake. Order: National Audiovisual Center, Distribution Branch, Washington, D.C. 20409. Note: the borrower pays for insurance and return postage. Films are not loaned to minors. Make requests three months in advance.

The New Willamette. 1975 — Free loan.

Film demonstrates how a major river can be restored, using as an example the Willamette River, the country's 12th largest river. It also is instructive as a model for the cleanup task ahead for other rivers of the nation. Order: HQDA — Headquarters, Department of the Army, DAEN-PA, Washington, D.C. 20314. Note: Borrower pays for return postage. Requests need only allow time for mailing.

Voices. 1974 — Free loan.

A chronicle of environmental action by concerned citizen activist groups in Chicago, Cleveland, and Missouri. Order: Modern Talking Picture Service, c/o Robert Shellenberger — Phone: 659-9234, Suite 4, 2000 L Street, Washington, D.C. 20036. Note: Borrower pays for insurance and return postage. Make requests three months in advance. Films are not loaned to minors.

Yours for a Change. 1972 — Free loan.

The film introduces basic ecological concepts such as the interdependence of all living things and recommends some environmental improvement projects within the capabilities of young viewers. The projects suggested by the film are useful, but the magnitude of community environmental problems is ignored. Order: Sterling Films Association, 866 Third Avenue, New York, N.Y. 10122.

NEWSLETTERS

"Chesapeake Bay Foundation Newsletter" & "Chesapeake Bay Foundation, Inc."

"Defenders of Wildlife News," Defenders of Wildlife

"Environment Action Bulletin," Environment Action

INSTRUCTIONAL GUIDES

Note: For further information on this and other general environmental curricula refer to Instructional Guides.

"National News Report," Sierra Club

"Sierra Club Bulletin," Sierra Club

ORGANIZATIONS

The main purpose of most environmental organization is to increase public and governmental awareness of the ecological problems plaguing the world today. Some concentrate on specific issues such as pollution and wildlife preservation; others deal with the general problems. The organizations listed below are consumer-oriented groups that are involved in government and private action.

California Coastal Alliance
Chesapeake Bay Foundation
Concern, Inc.
Consumer Action Now (CAN)
Environmental Action
Environmental Defense Fund
Environment Policy Center
League of Conservation Voters
League of Women Voters of the U.S.
Maryland Environmental Trust
National Resources Defense Council
Sierra Club

PERIODICALS

Available in school and/public libraries:

Environment. Level — HS, Sa/Issue-M-10 except in June and August.

Available through subscription:

Catalyst for Environmental Quality.

Environmental Affairs.

PUBLICATIONS

The following publications can be procured through the Government Printing Office or are sometimes available free from the individual agencies. The Vertical File in your public library may have copies of some of these publications.

Citizen Action Can Get Results. (Booklet) 12 pp.

GPO Stock #5500-0070, price 30¢.

Brief case histories of successful citizen campaigns are described in this pamphlet, which also contains suggestions for individual action.



U.S. Environmental Protection Agency • Washington, D.C. 20460

Don't Leave It All To The Experts. (Booklet) 24 pp.

GPO Stock #5503-0004, price 70¢.

A booklet describing fundamental tools and techniques for effective participation in environmental decision making. Included are chapters on lobbying, funding, collecting and disseminating information, participating in public hearings and court proceedings, and picking targets for action.

Oregon's Bottle Bill: The First Six Months. (Pamphlet) 14 pp. GPO Stock #5502-0011, price 35¢.

An evaluation of Oregon's "Bottle Bill," describing its effectiveness in reducing litter and its economic impact on the container industry, the soft drink industry, the brewing industry, and Oregon's food retailers.

Toward A New Environmental Ethic. (Booklet) 28 pp. GPO Stock #5500-0031, price 80¢.

This booklet describes what EPA is doing to fulfill the role of environmental watchman and discusses the work of the Agency's various divisions, research centers, and laboratories.

Patterns in Legislation for Environmental Quality. (Pamphlet) 8 pp. #417, price 20¢.

Order: League of Women Voters of the United States, 1730 M Street, NW., Washington, D.C. 20036

GOVERNMENT ORGANIZATIONS

Living in the Metropolitan Washington Area has numerous advantages, many of which both teachers and students are apt to overlook. Washington, the Nation's Capital, could also be called our Environmental Capital. Every government organization dealing with environmental decisions has its major office in Washington, and many private groups that deal with environmental awareness and protection are located in the city for lobbying purposes. For the teacher, then, living in this area is an indisputable resource. The laborious chore of writing letters to organizations is replaced by the ability to make an easy phone call.

Persistence is required since there is great frustration in having your call transferred and over and over again and/or being put on hold and apparently forgotten; but in the end, the result will be rich educational materials and information for your students.

Agricultural Research Service
14th & Independence Avenue, SW.
Washington, D.C.

ARS conducts research in the area of environment within the broad range of disciplines associated with agriculture. Investigates such things as the effects of pesticides on agricultural products and studies soil, water, and air pollution, and possible methods for alleviating pollutions.

The Bureau of Community Environmental Management — HEW

5600 Fishers Lane, Parklawn Building
Rockville, Maryland 20852

This agency is concerned with aspects of the environment as it affects physiological health and human well being and safe and healthful environmental conditions associated with our homes. The Bureau provides assistance to Federal, state, and local communities or agencies through technical consultation, training, and planning.

The Bureau of Land Management
18th & C Street, NW.
Washington, D.C.

Classifies, manages, and disposes of the public lands and their related resources according to the principles of multiple use management.

The Bureau of Mines
18th & C Street, NW.
Washington, D.C. 20240

The Bureau conducts research and administers regulatory programs dealing with environmental problems that are associated with mineral wastes.

GOVERNMENT AND PUBLIC ASPECT

The Bureau of Outdoor Recreation
18th & C Street, NW.
Washington, D.C. 20240

The Bureau of Outdoor Recreation has government-wide responsibilities in outdoor recreation and is in the mainstream of efforts to enhance and protect the environment.

Community Planning and Management — HUD
451 7th Street, SW.
Washington, D.C. 20410

Directs the administration of programs and activities in metropolitan and community planning, land and new communities development, and community facilities as well as environmental planning which includes noise abatement, air pollution, and solid waste disposal, water source planning, flood zoning, and land use.

Department of Commerce — National Oceanic and Atmospheric Administration
National Environmental Satellite Service
6010 Executive Boulevard
Rockville, Maryland 20854

Environmental Data Service
Grammax Building
8060 13th Street
Silver Spring, Maryland 20910

Department of State
Office of Environmental Affairs
2201 C Street, NW.
Washington, D.C. 20520

The Office of Environmental Affairs is concerned with developing and coordinating policy guidelines and programs for global environment cooperation. Coordinates environmental activities, ensuring that they are consistent with foreign policy.

Environment and Urban Systems
400 7th Street, SW.
Washington, D.C. 20590

Gives highest priority to environmental factors in planning, promoting, and building transportation systems based on the understanding that transportation is always a major land user and a shaper of the physical environment.

National Industrial Pollution Control Council
14th and Constitution Avenue, NW. — Room 4845
Washington, D.C. 20230

The Council is comprised of the chief executives of 63 U.S. companies and is organized along industry lines rather than by types of pollution. Identifies principal pollution control and abatement problems in essentially all areas of industry.

LEGISLATIVE BRANCH

Senate Committees

Agriculture & Forestry (pesticide regulation, animal wastes, conservation, etc.)

Appropriations (appropriation hearings for all environmental activities)

Banking & Housing & Urban Affairs (proposed environmental construction financing)

Commerce (fisheries & wildlife, conservation, environmental impact on waterways & ocean dumping)

Foreign Relations (international environmental problems)

Government Operations (hearings related to executive reorganizations, etc.)

Interior & Insular Affairs (land management, reclamation, conservation, etc.)

Judiciary (enforcement procedures, law revisions, etc.)

Labor & Public Welfare (environmental research & support for health, training, etc.)

Public Works (environmental technology, air and water pollution, etc.)

Science & Astronautics (environmental technology from space research)

Ways and Means (environmental tax reductions, etc.)

Joint Committee on Atomic Energy (nuclear radiation release rates for nuclear facilities)

House of Representatives Committees

Agriculture (pesticide regulation, animal wastes, conservation, etc.)

Appropriations (appropriation hearings for all environmental activities)

Bank & Currency (proposed environmental construction financing)

Education & Labor (some aspects of environmental training)

Government Operations (conservation, natural resources, technical research, executive reorganization, etc.)

Interior & Insular Affairs (environmental research, planning and reclamation of natural resources, etc.)

Interracial & Foreign Commerce (environmental research and support related to public health, power generation, etc.)

Judiciary (enforcement procedures, law revisions, etc.)

Merchant Marine & Fisheries (fisheries & wildlife conservation, ocean dumping, etc.)

Public Works (hearings on air, water, waste treatment and noise pollution)

Science & Astronautics (environmental technology from space research)

Ways and Means (environmental tax reductions, etc.)

JUDICIAL BRANCH

U.S. Court System (hearings, findings, judgments, reviews)

General Accounting Office (reviews and makes recommendations concerning environmental programs)

Council on Environmental Quality (develops & recommends national environmental policies)

EXECUTIVE BRANCH

Office of Management and Budget (monitors environmental progress versus expenditures, etc.)

Office of Science and Technology (comprehensive studies cutting across all agencies)

U.S. GOVERNMENT ENVIRONMENTAL ACTIVITY CHART

Organizations / Functions

Executive Departments

Dept. of Agriculture (supports & conducts research concerning herbicides, air & water quality, pesticides, etc.)

Dept. of Commerce (supports and conducts biological and physical research of natural resources, etc.)

Dept. of Defense (studies permits to regulate discharge of waste into inland and coastal streams)

Dept. of Health, Education and Welfare (health aspects of herbicides, pesticides, toxic substances, waste systems, etc.)

Dept. of Housing and Urban Development (environmental planning aspects of metropolitan and community planning)

Dept. of the Interior (studies physical environment, fish & wildlife, water resources & power, land management, etc.)

Dept. of Justice (advises & supervises suits concerning legal environmental actions)

Dept. of Labor (coordinates environmental training with other agencies)

Dept. of State (develops & coordinates international policy guidelines and programs)

Dept. of Transportation (develops environmental transportation policies, research and reduce through noise)

Dept. of the Treasury (finances of waste treatment facilities—legislation pending)

Independent Agencies

Atomic Energy Commission (develops standard radiological criteria for environmental controls)

Federal Maritime Commission (certifies sea vessels have assets to cover possible clean-up operations)

Federal Power Commission (researches environmental impact of electric power and natural gas industries)

General Services Administration (helps generate procurement specifications for supplies having low pollution potential)

National Academies of Science & Engineering (conducts and supports environmental technical programs)

National Aeronautics & Space Administration (studies for noise control & air improvement)

National Capital Planning Commission (conservation and environmental planning)

National Science Foundation (supports environmental studies & demonstration projects)

Smithsonian Institution (preparing environmental science exhibition)

Tennessee Valley Authority (conducts & supports experimental & demonstration projects)

U.S. Information Agency (conducts international environmental promotion)

Environmental Protection Agency

RESPONSIBLE FOR ENVIRONMENTAL CONTROL OF RADIATION, SOLID WASTES, AIR, WATER, PESTICIDES

Primary functions are to:

1. Establish and enforce National Standards
2. Monitor and analyze the environment
3. Conduct research and demonstration projects
4. Assist state and local governments to set up and finance their pollution control programs

National Park Service
18th & C Street, NW.
Washington, D.C.

The National Park Service promotes interpretive information, and investigative programs relating to park resources. National Environmental Education Development (NEED) tries to relate the individual child to his/her own environment; and the National Environmental Study Areas (NESA) is a nationwide endeavour to tie in with regular school curricula studies designed to develop an awareness and understanding of the total environment.

Soil Conservation Service
14th & Independence Avenue, SW.
Washington, D.C. 20250

The Soil Conservation Service is responsible for developing and carrying out a national soil and water conservation program in cooperation with farmers, ranchers, and developers with community planning agencies and with other agencies of the government.

United States Forest Service
South Agriculture Building
12th & Independence Avenue, SW.
Washington, D.C. 20250

The Forest Service has environmental responsibility in all areas dealing with the conservation and best use of the nation's forest lands. Research is divided into Watershed Management (soil and water), Range Management, Wildlife Management and Outdoor Recreation.

GOVERNMENT AGENCY PERSONNEL

Environmental Protection Agency
 401 M Street, SW., Waterside Mall
 Washington, D.C. 20360

Office of Information
 Office of Civil Rights and Urban Affairs
 Office of Education and Manpower Planning
 Speakers' Bureau (See Field Trip section.)
 Technology Transfer — Sponsors seminars on the latest wastewater treatment technology

Montgomery County Environmental Protection Department:

Air Pollution Control
 Housing Code Enforcement
 Rat Control
 Refuse Collection
 Resource Protection Division
 Rubbish and Weeds
 Sanitation
 Sediment Control

Solid Waste Management
 Wells and Septic Systems
 Zoning and Licenses
 Research and Monitoring Division

AGENCIES AND OFFICES ENVIRONMENTAL EDUCATION

Johnny Horizon Program
 Office of the Secretary
 Department of the Interior
 Washington, D.C. 20240

President's Environmental Merit Awards Program
 Office of Public Affairs
 Environmental Protection Agency
 401 M Street, SW., Waterside Mall
 Washington, D.C. 20460

Space Science Education Project
 1100 6th Street, SW.
 Suite 506
 Washington, D.C. 20024

Program Coordinator
 Interpretation and Recreation
 Fish and Wildlife Service
 Department of the Interior
 Washington, D.C. 20240

Environmental Education Coordinator
 Bureau of Land Management
 Department of the Interior
 Washington, D.C. 20240

Public Affairs
 Office of Environmental Science
 Natural History Building, Room 418
 Smithsonian Institution
 Washington, D.C. 20560

Environmental and Planning Coordination
 Bureau of Land Management
 Department of the Interior Code 220
 Washington, D.C. 20240

Office of Education
 Division of Technology and Environmental Education
 400 Maryland Avenue, SW.
 Washington, D.C. 20202

Education and Publications Branch
 Soil Conservation Service
 Department of Agriculture
 Washington, D.C. 20250

Education Relations Section
 Soil Conservation Service
 Department of Agriculture
 Washington, D.C. 20250

National Park Service
 Department of the Interior
 Room 3410, Main Interior Building
 Washington, D.C. 20240

Environmental Education
 Council on Environmental Quality
 722 Jackson Place
 Washington, D.C. 20006

Division of State Assistance
 Office of Education
 Department of Health, Education and Welfare
 400 Maryland Avenue, SW.
 R.O.B. 3, Room 3012
 Washington, D.C. 20202

Division of State Assistance
 Office of Education
 Department of Health, Education and Welfare
 400 Maryland Avenue, SW.
 Room 3109-B, R.O.B. 3
 Washington, D.C. 20202

International and Environmental Programs
 Room 3300, Amtrak Building
 Smithsonian Institution
 Washington, D.C. 20560

Educational Programs Division/Code FE
 National Aeronautics and Space Administration
 Washington, D.C. 20546

Environmental Protection Agency
 401 M Street, SW.
 Washington, D.C. 20460

Director of Educational Programs/FE
 National Aeronautics and Space Administration
 Washington, D.C. 20456

Office of the Chief of Engineers
 Department of the Army
 Forrestal Building, Room 4G065
 Washington, D.C. 20314

Conservation Liaison Office
 Public Affairs Office
 Office Chief of Engineers
 Washington, D.C. 20314

National Park Service
 Department of the Interior
 Room 3410, Main Interior Building
 Washington, D.C. 20240

GOVERNMENT AND PUBLIC ASPECT

National Park Service (NEED)
Department of the Interior
Room 5125
1100L Street, NW.
Washington, D.C. 20240

Office of Information
Forest Service
Department of Agriculture
Washington, D.C. 20202

Threshold, Inc.
Room 113-A
1785 Massachusetts Avenue, NW.
Washington, D.C. 20036

Select Committee on Education
Room 2178, Rayburn H.O.B.
Washington, D.C. 20515

Director, Technology Information Staff
1835 K Street NW.
Washington, D.C. 20460

Federal Energy Administration
Room 307, OPOB
11th & Pennsylvania Avenue, NW.
Washington, D.C. 20461

U.S. Fish and Wildlife Service
Interpretation and Recreation Program
Room 2058, Main Interior Building
Washington, D.C. 20240

Associate Director, Chesapeake Bay
Center for Environmental Studies
Smithsonian Institution
Route 4, Box 622
Edgewater, Maryland 21037

Office of Communications
Bureau of Outdoor Recreation
Room 4423, Main Interior Building
Washington, D.C. 20240

FILMS

Voices. 1974 — Free loan

Voices is a chronicle of environmental action by concerned citizen activist groups in Chicago, Cleveland, and St. Louis. Order: Modern Talking Picture Service, Suite 4, 2000 L Street, NW, Washington, D.C. 20036. Note: The borrower pays for insurance and return postage. Make requests three months in advance. Films are not loaned to minors.

Yours for a Change. 1972 — Free loan.

The film introduces basic ecological concepts such as the interdependence of all living things and recommends



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D. C. 20460

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GOVERNMENT AND PUBLIC ASPECT

IN ORDER TO INSURE THAT EPA LITERATURE IS BEING DISTRIBUTED ONLY TO THOSE HAVING A DEFINITE INTEREST, WE ASK THAT YOU INDICATE YOUR CURRENT OCCUPATION OR FIELD OF ENDEAVOR BY CIRCULING THE APPLICABLE CATEGORY AND MAILING LIST CODE(S). PLEASE DO NOT MAKE E-TIES IN THE STAR (*) COLUMN UNLESS YOU ARE USING THIS APPLICATION TO UPDATE YOUR PRESENT RECORDS. IF YOU WISH TO MAKE A CHANGE, ENTER 'A' FOR ADD, OR 'D' FOR DELETE IN THE STAR (*) COLUMN.

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	3	Company (Large Business—Non-Minority)		6	Other Extension Service		8	Editorial
	4	Company (Small Business—Minority)	1080	1	LABOR ORGANIZATIONS			
	5	Service Oriented Firm		2	Official of National/International			
1030	1	CITIZEN & CONSERVATION GROUPS		3	Member of National/International			
	2	Official of National Group		4	Official of State/Local	2030	1	COLUMNISTS AND WRITERS (SCIENCE MEDICAL)
	3	Member of National Group		5	Member of State/Local		2	Freelance
	4	Official of State/Local Group	1090	1	LIBRARIES		3	Newspaper
	5	Member of State/Local Group		2	Business & Industry		4	Other (Company, Organization, Etc.)
1040	1	EDUCATIONAL INSTITUTIONS (Faculty)		3	Educational			
	2	University		4	Public			
	3	College	1100	1	PHOTOGRAPHERS			
	4	High School		2	Magazine	2040	1	MEDIA (NON-MINORITY)
	5	Elementary		3	Newspaper		2	AM Radio Station and Staff
	6	Vocational		4	Sunday Magazine Supplement		3	FM Radio Station and Staff
1041	1	EDUCATIONAL INSTITUTIONS (Students)		5	Freelance		4	Form Oriented Radio Station TV Station and Staff
	2	University	1110	1	PLANNERS & PLANNING AGENCIES	2050	1	NEWSLETTERS AND BULLETINS
	3	College		2	Private Citizen		2	Environmental
	4	High School	1120	1	PROFESSIONAL ASSOCIATIONS		3	Other
	5	Elementary		2	Official of National Association	2060	1	NEWSPAPERS
	6	Vocational		3	Member of National Association		2	Daily
1042	1	PENMAP ENVIRONMENTAL MERIT AWARDS PROGRAM (PENMAP)		4	Official or Member of State/Local Association		3	Weekly
	2	Camp	1140	1	PROFESSIONAL, EXECUTIVE AND RELATED OCCUPATIONS		4	Wire Service
	3	Boy Scout		2	Business Administrator	2070	1	MAGAZINES AND JOURNALS
	4	Girl Scout		3	Clergyman		2	General Popular
	5	Campfire Girl		4	Engineer	2080	1	MAGAZINES AND JOURNALS
	6	YMCA		5	Health Service		2	TECHNICAL, TRADE, SCIENTIFIC AND PROFESSIONAL
	7	YWCA		6	Mathematics and Related Fields		3	Business and Industrial Management
	8	4-H Club		7	Natural Science		4	Ceramics and Glass
	9	Other		8	Performing Arts		5	Chemical
1043	1	PENMAP Enrollment Year		9	Social Science		6	Consumer
	2	1973		10	Public Utilities		7	Educational
	3	1974		11	Manager		8	Electrical
	4	1975		12	Transportation		9	Electronics, Instrumentation
	5	1976		13	Sales		10	Engineering Construction
1044	1	PENMAP AWARD RECEIVED		14	Communications		11	Food, Grocery
1050	1	FOREIGN		15	Economist		12	Industrial
	2	International Organization (U.S. Based)		16	Ecologist		13	Legal
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1060	1	GOVERNMENT (Federal)		3	Official of National Association		16	Marine Sciences
	2	Congressman		4	Member of National Association		17	Measurement and Instrumentation
	3	Senator		5	Official or Member of State/Local Association		18	Medical and Science, General
	4	Congressional Staff Member		6	Media—Media		19	Medical and Science, Technical
	5	Executive Office Committee	2010	1	COLUMNISTS AND WRITERS (GENERAL)		20	Metallurgy and Geophysics
	6	EPA Official		2	Freelance		21	Municipal & Urban Planning
	7	EPA Employee					22	Housing & Land Use
	8	U.S. Public Health Service Officer Assigned to EPA					23	Nuclear Science
							24	Paint & Decorating

Continued

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NEWSLETTERS

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League of Women Voters of the U.S.
Maryland Environmental Trust
National Resources Defense Council
Sierra Club

PERIODICALS

Available in school and/or public libraries:
Environment. Level — HS, Sa/Issue M-10 except in June and August.

Available through subscription:
Catalyst for Environmental Quality.

Environmental Affairs. Environmental Law Center, Boston College Law Center.

Patterns in Legislation for Environmental Quality. 8 pp., #417, price 20¢

FIELD TRIPS

Audubon Naturalist Society 8940 Jones Mill Road

Chevy Chase, Maryland 20015

Offers guided tours at "Woodend," the society's 40 acre estate. Hands-on approach emphasized. Topics ranging from woodland studies to bird life. Rich source of printed materials available.

Botanic Garden

Maryland Avenue

(between 1st and 2nd Streets, SW.)

Washington, D.C. 20024

Take a field trip through an actual rainforest. Daily: 9:00 a.m. to 4:00 p.m.

Brighton Dam at Tridelphia Lake

Brighton Dam is on the Patuxent River north of Olney and Ashton and has picnic tables and a beautiful natural setting. (Go north on New Hampshire Avenue extended.) Operated by the Washington Suburban Sanitary Commission.

Brookside Nature Center and

Brookside Arboretum

Both are located in Wheaton Regional Park which itself has many nature trails. This entire regional park is operated by Maryland-National Capital Park & Planning Commission. Address: 1400 Arcola Avenue, Wheaton.

Cabin John Regional Park

Located near Seven Locks Road off either Tuckerman Lane or Democracy Boulevard, Bethesda. Children can get close-up view of animals, and there are hiking-nature trails and picnic areas. Operated by the Maryland-National Capital Park & Planning Commission.

Clearwater Nature Center

Maryland-National Capital Park & Planning Commission

RFD 1, Box 325

Clinton, Maryland 20735

Offers trail hikes, arts and crafts projects, films, and nature exhibits. Teachers should phone to arrange programs for students. Hours and class size vary with different programs.

C&O Canal

This slice of American history winds 184 miles along the Potomac from Georgetown to Cumberland, Maryland. The Canal and its right-of-way is a national historical park operated by the National Park Service. Authentic locks, a natural history museum, and the beauty of the Potomac's Great Falls make it a fine place to visit. The best guide to the history and ecology along the canal is *Towpath Guide to the C&O Canal* by Thomas F. Hahn. It leads the reader on a step-by-step journey down the canal and towpath with detailed, knowledgeable, and enthusiastic descriptions. The Guide comes in four sections, each one covering a part of the Canal. Each section costs \$2.50,

with the entire set being \$8.50. Published by American Canal and Transportation Center, 809 Rathton Road, York, Pennsylvania 17403.

Catoctin Mountain Park

National Park Service

U.S. Department of the Interior

Thurmont, Maryland 21788

Nature trails are open year-round, 7 days a week, from morning till dark. Crafts demonstrations and environmental museum are open one day a week in spring and fall. Reservations must be made a couple of weeks in advance. The museum can receive 210 students every 1½ hours.

Harper's Ferry, West Virginia

Where 3 states and 2 rivers (Potomac and Shenandoah) converge spectacularly amidst high cliffs. The scene of John Brown's ill-fated 1859 raid, it has been largely restored by the National Park Service. See the historical slide show, and enjoy the old cemetery up in back of the town. Many of the old stone buildings have high water marks from past floods. Almost everything is FREE!

Lathrop E. Smith Environmental Education Center

Located off Muncaster Mill Road in Rockville, the Smith Center is headquarters for the MCPS Outdoor Education Program. On the same site is the Meadowside Nature Center with natural history displays and outdoor nature trails. For information about the MCPS Environmental Education Program, contact Lathrop E. Smith Environmental Education Center.

Lightship Chesapeake (National Park Service)

1200 Ohio Drive, SW.

Washington, D.C. 20242

The decommissioned Coastguard Lightship Chesapeake is being used by the National Park Service as a fully operating floating environmental laboratory. Environmental activities for 6th graders include a program in water content and analysis; a fully operating weather station; different aquatic habitats displayed in the ship's aquarium; a simulated submarine cruise; and navigation and compass orientation. The activities run for one day, from 10:00 a.m. to 2:00 p.m. There is also a high school program with projects for studying specific ecosystems.

NOTE: Lightship Chesapeake is primarily for D.C. elementary students; however, some days are set aside for suburban school classes. Because of the popularity of the program, reservations should be made a year in advance.

Montgomery County Iron — Metal Company

15000 Southlawn Lane

Rockville, Maryland

The company accommodates group tours of 30 to 50 students to see scrap iron crushed and paper and nonferrous metals sorted and reclaimed for recycling. Before going, a group should know the principles of electromagnets. Call 2-3 weeks in advance for an appointment. Appropriate for Grades 1-6.

Maryland State Department of Health

& Mental Hygiene

Bureau of Air Quality & Noise Control

The O'Connor Building

201 West Preston Street

Baltimore, Maryland 20201

The air monitoring program (AIRMON) covers the computer system for gathering data, and includes discussion of the monitoring instrumentation. Teachers should call John E. McQuade, head of AIRMON system, to arrange classes. Groups of up to 30 are received at laboratories in Suitland, Cheverly, Silver Spring, and Bethesda from 8:30 to 4:30, Monday through Friday.

National Aquarium

Fish & Wildlife Service

U.S. Department of the Interior

Lower Lobby of Commerce Building

14th Street between Constitution

and E Streets, NW.

Washington, D.C. 20230

More than 2,000 specimens representing almost 350 species of the world can be seen here. Scheduled feeding of fish occurs on Monday, Wednesday, Friday, and weekends. Teaching aids are available. The aquarium is open 9:00 to 5:00, 7 days a week, to groups of up to 100. Teachers should call before bringing classes.

National Zoological Park (Smithsonian)

3000 Connecticut Avenue, NW.

Washington, D.C.

The zoo has developed an Environmental Education Program. Their educator is a naturalist working primarily with 3rd and 4th grade groups. His introductory talk to the "World of Mammals" tour has a strong environmental message.

Oxon Hill Children's Farm (NCPE)

6411 Oxon Hill Road

Oxon Hill, Maryland 20021

Typical of area farms at the turn of the century, this is a working farm with crops, animals, and equipment. Farming demonstrations are held throughout the year. Workers are dressed in appropriate farm clothing. (And the children probably should be also.)

Pierce Mill

The old Mill is in Rock Creek Park at the intersection of Park Road and Beach Drive, NW., Washington, D.C. Students learn how energy sources and technology have changed since the early 1800's by watching an old waterwheel grain mill in operation. Visiting days are Wednesday through Sunday.

Rock Creek Nature Center

This nature center has a natural history museum, planetarium, and outdoor trails. It's located at Military and Glover Roads, NW., Washington, D.C. and is operated by the U.S. Park Service.

Rockville Water Filtration Plant**Sandy Landing Road****Rockville**

Call GA4-8000, ext. 242 to make an appointment for a guided tour which highlights water filtration, purification techniques, and laboratory testing for impurities.

Smithsonian Institution**Museum of Natural History**

10th Street and Constitution Avenue, NW.
Washington, D.C.

Museum of History and Technology

12th and 14th Streets
and Constitution Avenue, NW.
Washington, D.C.

The Smithsonian remains one of the best educational bargains in town. Both museums have occasional displays and exhibits that could be useful for environmental education. (Make appointments at least 3 weeks in advance.) Particularly good is the exhibit titled *It All Depends* at the Museum of Natural History. It illustrates how humans create new ecological balance.

Sugarloaf Mountain**Dickerson, Maryland**

Only about 1300 feet high, Sugarloaf hardly dominates the northwestern Montgomery County skyline; but it is in a beautiful natural setting and is well supplied with hiking trails, scenic overlooks, and picnic sites. Drive halfway up and then climb to the top. (Or if you're energetic, park at the bottom, and walk all the way to the top.) It is owned by Stronghold, Inc., a non-profit corporation dedicated to "teaching an appreciation of natural beauty." Highlights include a great variety of trees and shrubs, and a granite northwestern face. Open all year, 8:00 a.m. to sunset. There are no Rangers nor tours, so you're on your own. It's best for interested teachers who have never been there to make a reconnaissance trip.

Theodore Roosevelt Island**Washington, D.C.**

A Natural Science Wildlife preserve with foot trails and walks. Call National Capital Parks to arrange a special tour conducted by Park Rangers. A National Environmental Study Area (NESA) has been instituted by the National Park Service on the island. Its mission is to communicate with grade school students on the need for environmental awareness. Two-hour teacher workshops conducted by Park Rangers may be arranged on the island or on the school grounds. With the techniques gained from the workshops, teachers may then conduct a nature study with their classes at their own convenience.

Turkey Run Farm**Turkey Run Park**

(Off George Washington Parkway)

McLean, Virginia

It's an actual colonial-era subsistence farm operated by the National Park Service.

"A poor man's Mt. Vernon. Most southern colonial Americans lived on small farms like this, rather than in opulent, plantation-style mansions." — Dave Harrison
Turkey Run will take up to 30 students. It is open 10:00 a.m. to 4:30 p.m., Wednesday through Sunday. Be sure to call at least three weeks ahead of time to arrange a large group guided tour. Phone National Capital Parks.

U.S. Department of the Interior Museum**C Street between 18th****and 19th Streets, NW.****Washington, D.C. 20240**

Tours emphasize conservation and natural resources. Students see pictures and models of dams, farm land, irrigation projects, and varieties of wild life. Call at least two weeks in advance for reservations.

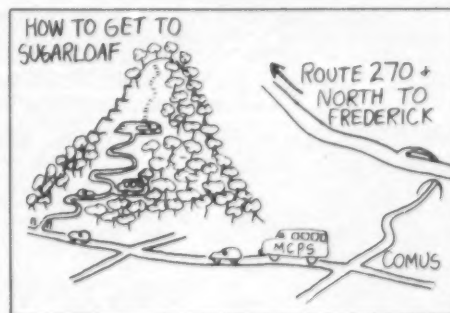
U.S. Environmental Protection Agency**401 M Street, SW., Waterside Mall****Washington, D.C.**

Call to arrange a one-hour tour of exhibits describing the causes of pollution, the growth of pollution in the U.S., technology available for pollution control, and actions underway to abate pollution.

There is also a Speaker's Bureau, which will supply your school with a speaker and film to meet your particular interest.

Washington Suburban Sanitary Commission**Potomac Filtration Plant**

A 45-minute tour of the filtration plant is given for students in Grades 5-12. Films and speakers available for various age groups. Call to get more information or to arrange for a tour (two weeks notice required).



ORGANIZATIONS

Air Pollution Control Association 4400 Fifth Avenue Pittsburgh, Pennsylvania 15213

Nonprofit technical and educational organization dedicated to advancing the science and art of pollution control.

America the Beautiful Fund of the National Area Council 1501 H Street, NW. Washington, D.C. 20005

Gives recognition, technical support, and grants to private citizens and community groups to initiate local action projects improving the quality of the environment including design, land preservation and planning, arts, historical and cultural preservation, and communications.

American Conservation Association 30 Rockefeller Plaza New York, N.Y. 10020

Privately supported non-membership educational and scientific organization dedicated to the advancement of understanding of conservation and to the preservation and development of natural resources for public use.

American Forest Institute 1619 Massachusetts Avenue, NW. Washington, D.C. 20036

Promotes the advancement of intelligent management of forests, soil, water, wildlife, and other natural resources.

The American Forest Institute publishes the following items, which can be ordered directly from the AFI:

Trees Want You (Mini-Course)

Who Owns the American Forest? Where Is It?

Outlook for Meeting Future Timber Demands — free

Clearcutting on Federal Timberlands (Report of Public Land Subcommittee) — free

Indian Valley Classroom Game — free

Recycling Questions and Answers (Leaflet) — free

AFI Cassette Programs and Sound Filmstrips — varying topics and costs

Appalachian Trail Conference Box 236

Harpers Ferry, West Virginia 25425

Coordinates volunteer maintenance of the 2,040 mile Appalachian Trail from Maine to Georgia. Also provides publications and other guidance to groups interested in establishing and maintaining trail systems.

Association for Environmental and Outdoor Education 2429 Walnut Boulevard Walnut Creek, California 94591

Dedicated to awakening an interest in environmental and outdoor education; and to the encouragement, sponsorship, and conduct of workshops and other meetings concerned with environmental and outdoor education.

Association of State and Interstate Water Pollution Control Administrators C/o NEIWPCC 607 Boylston Street

Boston, Massachusetts 02116

Administrators of state and interstate governmental agencies legally responsible for prevention, abatement, and control of water pollution.



Trees Want YOU.

A mini-course to abolish ignorance about the American forest

WORK WE'VE DONE

COMMUNITY COMMUNICATIONS

ANACOSTIA NEIGHBORHOOD MUSEUM, SMITHSONIAN INSTITUTION



Food is nature's
gift of life
for life
to eat is to
celebrate life's
continuation

Developing a series of community awareness and identification materials with the museum and teachers from the community for preschool and early elementary age children. One component, an illustrated community access map for both children and teachers links the places, services and resources of the community together in an awareness walk through the various neighborhoods of Anacostia.

ASSOCIATES FOR RENEWAL IN EDUCATION DAY CARE PROJECT

A coordinated information package of day care staff training materials designed for A. R. E. under a grant from H. E. W. The eight workbooks and two audio-visual components of the project were designed through a participatory process with teachers and the staff of the Advisory Learning Exchange and reflect both practical and theoretical information from the teachers' own experiences.

ROSBUD INDIAN RESERVATION COMMUNITY SCHOOL BOARD, SOUTH DAKOTA



Planning a community process to include a comprehensive program of community development, educational planning and school facilities programming for R. Francis Indian School. This project includes planning, fund-raising, community communications, and local workshops and program design.

ESTEE HALL, SHAW UNIVERSITY RALEIGH, N. C.

A comprehensive design, planning, educational and architectural programming and fund raising effort to make this historic building both a vital structure and a focal point for community/city/community relations.

12

Attic and Cellar Studios Ron and Marly Thomas 1346 Connecticut Avenue, NW., Room 913 Washington, D.C. 20036

Two highly creative environmental consultants who do research design materials and plan programs in elementary environmental education utilizing the arts as a vehicle for learning. They emphasize an interdisciplinary approach to environmental education involving the natural and cultural environment. Note: Attic and Cellar Studios is a private business, so be sure to inquire about rates.

California Coastal Alliance P.O. Box 4161 Woodside, California 94062

Founded to facilitate passage of coastal management protection law in California, now acts as advocate for general land use reform. Supplies bibliographical and reference materials.

Central Atlantic Environment Service
1717 Massachusetts Avenue, NW.
Washington, D.C. 20036

Non-profit organization committed to providing full and accurate information on environmental issues and disseminating this information to citizens, civic groups, and business and government leaders in the Virginia, Maryland, and D.C. area.

Chesapeake Bay Foundation, Inc.
P.O. Box 1709, 17 State Circle
Annapolis, Maryland 21404

A non-profit education and scientific membership organization established to promote the environmental welfare of the Chesapeake Bay and its tidal tributaries.

Citizens for Clean Air
572 Madison Avenue
New York, N.Y. 10022

Seeks to increase public awareness of the hazards of air pollution and the technological and legal tools available for control of air pollution. Supplies references for students and program suggestions for teachers.

Committee for Environmental Information
438 North Skinker Boulevard
St. Louis, Montana 63130

An organization of scientists and others in the St. Louis area who are concerned with dissemination of scientific information to the general public. Writes environmental curricula for high schools. Reviews environmental claims of advertisers.

Concern, Inc.
2233 Wisconsin Avenue, NW.
Washington, D.C. 20007

Seeks to educate the American consumer to exercise selective buying practices in the market and to persuade business and industry of the emerging market for products which are not environmentally harmful.



CONCERN

Inc.

CONCERN'S DETERGENT POSITION

Neither the soap and detergent industry nor the Federal government have adequately clarified the issues concerning laundry detergents. There are three main consumer issues: environmental, individual safety and effective performance.

In the environment, phosphate based detergents contribute to the pollution of many lakes and rivers. The five billion pounds of detergents produced a year contain two billion pounds of phosphate compounds. Sewage treatment as recommended by industry and government cannot solve this problem for many years.

Phosphate in detergents acts, primarily, as a water softener. Many sections of the country do not require water softening agents at all. Consumer Report, October, 1971, states that, in tests based on an area close to the national average in water hardness, one-half the recommended usage of Tide XK resulted in good-to-very-good cleaning effectiveness. One-eighth the recommended dosage gave results from fair-to-good.

Detergent manufacturers should substantially reduce the phosphate content in detergents as quickly as possible.

Many household products carry warning labels in terms of individual safety. These products should, of course, be kept out of the reach of small children. Some phosphate and non-phosphate detergents carry such warnings. Read labels on all products you use in the home.

Effective cleaning should mean that clothes are free of germs and visible soiling. It does not mean "whiter than white" or "dazzling." Soap, low phosphate, or non-phosphate products clean clothes quite effectively. When using soap in hard water areas, washing soda can be added as a water softener.

The public deserves reliable and substantive information about the total detergent question. Concern, Inc. urges the soap and detergent industry to label all major components on product containers. Concern, Inc. also urges the Federal government to fully inform the public of the results of its research on the environmental and health aspects of laundry products.

For product labeling, consumers should write to both manufacturers of soap and detergent products and The Federal Trade Commission, Assistant Director for Industry Guidance, Bureau of Consumer Protection, Washington, D.C.

Citizens should write government agencies requesting comprehensive information and analyses about the government's tests and studies relating to the health and environmental aspects of laundry products. One should also request a thorough clarification about the use of phosphate detergents, low phosphate and non-phosphate detergents.

DETERGENT MANUFACTURERS AND ASSOCIATIONS

Colgate Palmolive
300 Park Avenue
New York, New York 10022

Procter and Gamble
301 East Sixth Street
Cincinnati, Ohio 45202

Lever Brothers, Inc.
390 Park Avenue
New York, New York 10022

Soap and Detergent
Association
485 Madison Avenue
New York, New York 10022

Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Food and Drug Administration
5600 Fisher's Lane
Parklawn Building, Room 14-71
Rockville, Maryland 20852

Council on Environmental Quality
722 Jackson Place, N.W.
Washington, D.C. 20006

Dr. Jesse L. Steinfeld,
Surgeon General
U.S. Public Health Service
Department of Health,
Education, and Welfare
Washington, D.C. 20201

GOVERNMENT AGENCIES

CONCERN'S RECOMMENDATIONS

- USE:**
- Soap and washing soda.
 - Low phosphate or non-phosphate detergents.
- READ:**
- Labels for phosphorus content. (Note: The phosphate compound is usually 3-5 times the elemental phosphorus content).
 - Labels warning of potential health hazards.

Printed on recycled paper.

Fall, 1971

ORGANIZATIONS

The Conservation Foundation
1717 Massachusetts Avenue, NW.
Washington, D.C. 20036

Conducts research, education, and information programs to develop knowledge, improve techniques, and stimulate public and private decision making to improve the quality of the environment.

Consumer Action Now (CAN)
30 E. 68th Street
New York, N.Y. 10021

Objective is to encourage people to conserve rather than to consume their environment.

Crusade for a Cleaner Environment
2000 L Street, NW., Suite 520
Washington, D.C. 20036

Translates existing public sentiment against litter and pollution into effective citizen action to promote returnable containers.

Defenders of Wildlife
2000 N Street, NW.
Washington, D.C. 20036

A national non-profit educational organization dedicated to the preservation of all forms of wildlife.

Ecology Forum
124 E. 39th Street
New York, N.Y. 10016

Composed of universities, government agencies, conservation groups, and persons interested in environmental information for research legislation, complicity with laws, and regulations or action. Main goal is to "facilitate access to environmental information by locating it, abstracting it, and storing it in a computerized data bank from which it may be retrieved for immediate use. Operates mainly through Environment Information Center."

Enviroic Foundation International
P.O. Box 88

Notre Dame, Indiana 46556

Principal purpose of the Foundation lies in the development of educational programs, research, and practical demonstrations in various realms of environmental comprehension and design; e.g., architecture, urban ecology, regional planning, landscape planning, suburban accommodation.

Environmental Action
1346 Connecticut Avenue, NW., Suite 731
Washington, D.C. 20036

National political lobby organization with prime focus on energy, solid waste, air and water pollution, transportation, nuclear power, and workplace and urban environment.

Environmental Defense Fund
162 Old Town Road
East Setauket, N.Y. 11733

National environmental organization operating as a team of lawyers and scientists combining their skills to end environmental degradation through legal action.

Environmental Education Planning Committee for the District of Columbia
1424 16th Street, NW., Suite 303
Washington, D.C. 20036

The Committee has developed a list of recommendations for environmental planning in D.C. and a D.C. environmental resource directory, and has established a teacher environmental resource center.

Environment Policy Center
324 C Street, SE.
Washington, D.C. 20008

Works to influence Congressional and Executive branch decisions about national environmental issues and to develop information for public participation, and serves as a Washington base for local and regional citizens groups.

Environmental Technology Seminar
P.O. Box 391
Bethpage, N.Y. 11714

An organization of scientists and engineers for a cleaner environment providing for the exchange of technical facts and ideas. Conducts public lectures and debates; provides witnesses and speakers for public hearings and environmental groups; maintains library of reports and clippings on environmental technology.

Friends of the Earth
529 Commercial Street
San Francisco, California 94111

Committed to the preservation, restoration, and rational use of the earth. Chapters throughout the world.

The Garden Clubs of America
598 Madison Avenue
New York, N.Y. 10022

A national non-profit organization dedicated to conservation of natural resources, protection of the environment, control of pollution, and billboard and sign control. Publishes an excellent educational packet entitled *The World Around You*.

International Association for Pollution Control
1625 Eye Street, NW., Suite 906
Washington, D.C. 20006

Members can be any individual institution, governmental group, business, and corporation having an interest in pollution control and conservation. Conducts educational programs and research, compiles statistics, and collects factual data.

International Institute for Environmental Affairs
1225 19th Street, NW.
Washington, D.C. 20036

Clearing house for ideas, information, and analyses of the central challenges and problems bearing on ecological relationships.

Interstate Commission on the Potomac River Basin
#814 East-West Towers
4350 East-West Highway
Bethesda, Maryland 20014

Izaak Walton League of America
1800 N. Kent Street, Suite 806
Arlington, Virginia 22209 and
Maryland State Division of IWLA
6700 Needwood Road
Derwood, Maryland 20855

Promotes means and opportunities for educating the public to conserve, maintain, protect, and restore the soil, forest, water, and other natural resources of the U.S.

League of Conservation Voters
620 C Street, SE.
Washington, D.C. 20003

A nonpartisan campaign that supports those legislators who are working hardest to protect the environment. Two biennial booklets are published: "How Your Congressman Voted on Critical Environmental Issues" and "How Your Senator Voted on Critical Environmental Issues."

League of Women Voters of the United States
1730 M Street, NW.
Washington, D.C. 20036

Nonpartisan organization in all 50 states working to promote political responsibility through informed participation. Principle issues for political action are water and air quality and solid waste management.

Maryland Environmental Trust
8 E. Mulberry Street
Baltimore, Maryland 21202

Formed to conserve, improve, stimulate, and perpetuate the aesthetic, natural, health and welfare, scenic, and cultural quality of Maryland's environment.

National Council of the Paper Industry for Air and Stream Improvement
260 Madison Avenue
New York, N.Y. 10016

Conducts research on stream pollution, air pollution, and waste disposal problems for the pulp and paper industry.

**National Foundation for
Environmental Control**
151 Tremont Street
Boston, Massachusetts 02111

Aim is to encourage communication between those who generate the information and the user. Maintains a library of 2,000 volumes and a data bank on environmental law, science, engineering, and management.

National Wildlife Federation
1412 Sixteenth Street, NW.
Washington, D.C. 20036

Creates and encourages an awareness among citizens for wise and proper management of those resources of the earth upon which mankind depends: soils, plant life, and wildlife. NWF has also developed a series of 24 Environmental Discovery Units K-12 which develop science projects as they relate to nature. Each unit is a teacher's guide which is used to show students that ecology is everywhere. NWF publishes several excellent periodicals, the largest being *National Wildlife*. Others available directly from the Federation are *Wildlife Conservation*, "Conservation News," and the *Conservation Directory* (see spotlight below).

**Natural Resources Defense
Council (NRDC)**
15 W. 44th Street
New York, N.Y. 10036

An organization of lawyers, scientists, and private citizens who seek to protect natural resources by working to increase public understanding of the means by which the law may be used.

The Nature Conservancy
1800 N. Kent Street, Suite 800
Arlington, Virginia 22209

Nonprofit membership corporation dedicated to preservation of natural areas for present and future generations. Cooperates with college, university, public, and private conservations to acquire lands for scientific and educational purposes.

Planned Parenthood-World Population
515 Madison Avenue
New York, N.Y. 10022

Population Reference Bureau
1755 Massachusetts Avenue, NW.
Washington, D.C. 20036

Gathers, interprets, publishes, and distributes information concerning population and related subjects on a nonprofit, scientific, and educational basis for the general public and formal education. Consults with other groups in the U.S. and abroad and operates an information service, library, and international program with emphasis on Latin America.

Public Interest Research Group
2000 P Street, NW, Room 511
Washington, D.C. 20036

A nonprofit public interest law firm engaged in research, investigation, and litigation of a variety of issues of interest to the public: government and corporate responsibility, environmental and conservation problems, and consumer affairs. Ralph Nader is the director.

Rachel Carson Trust for the Living Environment
8940 Jones Mill Road
Washington, D.C. 20015

Furtheres the philosophy of Rachel Carson by developing through research and education an awareness of the problems of environmental contamination and to serve as a clearinghouse for environmental information.

Recycling Revolution Cooperative
14 Park Avenue
Somerville, Massachusetts 02144

Recycles computer and office paper, conducts education programs and produces educational materials.

Sierra Club
1050 Mills Tower
San Francisco, California 94104 or

Washington Chapter
324 C Street, NE.
Washington, D.C.

An organization of people who feel the need to know more of nature, and know that this need is basic to human beings. Undertakes and publishes scientific and educational studies concerning all aspects of man's environment and natural ecosystems. Works on urgent campaigns to save threatened areas and wildlife; conducts annual environment workshops for educators. Local chapters schedule talks and sponsor films and exhibits.

Society for Environmental Stabilization
Box 252

Fayetteville, Arizona 72701
Individuals dedicated to instructing and involving citizenry in environmental education.

Tundra Ecosystem Research Program
c/ Tundra Biome Center
University of Alaska
Fairbanks, Alaska 99701

General aims of the research are to learn enough about the tundra ecosystem to be able to predict what will happen to it under changing conditions.

Water Pollution Control Federation
3900 Wisconsin Avenue
Washington, D.C. 20016

Federation of professional environmental officials whose goal is to advance the practical knowledge concerning the nature, collection, treatment, and disposal of

domestic and industrial waste waters, and the design and construction of facilities for these programs.

The Wilderness Society
729 15th Street, NW.
Washington, D.C. 20005

National conservation organization formed to secure preservation of wilderness, to carry on an educational program concerning the value of wilderness and how it may best be used and preserved in the public interest; to make and encourage scientific studies of wilderness; and to mobilize cooperation in resisting its invasion.

Zero Population Growth
1346 Connecticut Avenue, NW.
Washington, D.C. 20036



NEWSLETTERS

Air Pollution Notes

College of Agriculture and
Environmental Science
Rutgers University
New Brunswick, New Jersey 08903

AEOE Newsletter

Association for Environmental
and Outdoor Education
2423 Walnut Boulevard
Walnut Creek, California 94591

The Best Economically and Technologically Feasible Newsletter

Public Information Office
Minnesota Pollution Control Agency
1935 W. County Road, B2
Roseville, Minnesota 55113

Catalyst for Environmental Quality

274 Madison Avenue
New York, New York 10016

Center for Environmental Study News

Center for Environmental Study
1447 Lake Drive, SE.
Grand Rapids, Michigan 49506

Central Atlantic Environment News

Central Atlantic Environment Service
1717 Massachusetts Avenue, NW.
Washington, D.C. 20036

C-F Letter

The Conservation Foundation
1717 Massachusetts Avenue, NW.
Washington, D.C. 20036

The Chesapeake Bay Foundation

The Chesapeake Bay Foundation
Prince George & East Streets
Box 1709
Annapolis, Maryland 21404

Colorado Master Plan for Environmental Education Newsletter

Center for Research and Education
2010 E. 17th Avenue
Denver, Colorado 80206

Conservation News

National Wildlife Federation
1412 16th Street, NW.
Washington, D.C. 20036

Conservation Report

National Wildlife Federation
1412 16th Street, NW.
Washington, D.C. 20036

(Note: Published only during sessions of Congress.)

Defenders of Wildlife News

Defenders of Wildlife
2000 N Street, NW.
Washington, D.C. 20036

Earth, I Care Newsletter

Earth Awareness Foundation
1730 NASA Boulevard, Suite 209
Houston, Texas 77058

Earthworm News

Recycling Revolution Cooperative
14 Park Avenue
Somerville, Massachusetts 02144

Ecolog

Environmental Science Center
5400 Glenwood Avenue
Minneapolis, Minnesota 55422

The Ecological Society of America Bulletin

Box 6694 College Station
Durham, North Carolina 27708

Environment Action Bulletin

Rodale Press
33 E. Minor Street
Emmaus, Pennsylvania 18049

Environment Facts

Published by Environmental
Protection Agency
Office of Public Affairs
401 M Street, SW., Waterside Mall
Washington, D.C., 20460

Environment News

Published by Environmental
Protection Agency
Office of Public Affairs
401 M Street, SW., Waterside Mall
Washington, D.C. 20460

Environment Reporter

Bureau of National Affairs, Inc.
1231 25th Street, NW.
Washington, D.C. 20037

(Note: Past issues put together in notebook form are
available at the Rockville branch of the Montgomery
County Public Library.)

Environmental Quality Bulletin

Public Relations Department
American Iron and Steel Institute
1000 16th Street, NW.
Washington, D.C. 20036

Environmental Vistas

Forest Service
U.S. Department of Agriculture
Milwaukee, Wisconsin 53203

EPA Citizens' Bulletin

U.S. Environmental Protection Agency
Office of Public Affairs
401 M Street, SW., Waterside Mall
Washington, D.C. 20460

Forum

International Association for
Pollution Control
1625 Eye Street, NW., Suite 906
Washington, D.C. 20006

The Green Scene

National Capital Parks
National Park Service
U.S. Department of the Interior
Washington, D.C.

Highlights

Water Pollution Control Federation
3900 Wisconsin Avenue
Washington, D.C. 20016

IRLWR Newsletter

Institute for Research on Land
and Water Resources
Penn State University
University Park, Pennsylvania 16802

Interchange

Population Reference Bureau
1755 Massachusetts Avenue, NW.
Washington, D.C. 20036

Investigator

Institute for Environmental Education
8911 Euclid Avenue
Cleveland, Ohio 44106

KIOSK

Office of Public Affairs
National Capital Parks
1100 Ohio Drive, SW.
Washington, D.C. 20242

Litter Bits of News & Facts

Crusade for a Cleaner Environment
2000 L Street, NW., Suite 520
Washington, D.C. 20036

The Living Wilderness

The Wilderness Society
729 15th Street, NW.
Washington, D.C. 20005

Man and Resources

Canadian Council of Resources
and Environment Ministers
1170 Beaver Hall Square
Montreal 111, PQ, Canada

The Mother Earth News

P.O. Box 38
Madison, Ohio 44057

National News Report

Sierra Club
1050 Mills Tower
San Francisco, California 94104

The Nature Conservancy News

The Nature Conservancy
1800 N. Kent Street, Suite 800
Arlington, Virginia 22209

Newsletter

Metropolitan Washington Coalition
for Clean Air, Inc.
1714 Massachusetts Avenue, NW.
Washington, D.C. 20036

Not Man Apart

Friends of the Earth
529 Commercial Street
San Francisco, California 94911

The ORV (Off Road Vehicle) Monitor

Environment Defense Fund
2728 Durant Avenue
Berkeley, California 94704
\$6 per year, bimonthly

Outdoor News Bulletin

Wildlife Management Institute
709 Wire Building
Washington, D.C. 20005

Population Bulletin

Population Reference Bureau
1755 Massachusetts Avenue, NW.
Washington, D.C. 20036

Potomac Basin Reporter

Interstate Commission on the
Potomac River Basin
4350 East-West Highway
Bethesda, Maryland

Ranger Rick's Nature Magazine

158 Walnut Street
Philadelphia, Pennsylvania 19102

Sierra Club Bulletin

Sierra Club
1050 Mills Tower
San Francisco, California 94104

Watch It

Wilderness Watch
P.O. Box 3184
Green Bay, Wisconsin 54303

Wilderness Report

Wilderness Society
729 15th Street, NW.
Washington, D.C. 20005

World Environment Newsletter

International Institute for
Environmental Affairs
1225 19th Street, NW.
Washington, D.C. 20036



PERIODICALS

SCHOOL AND LIBRARY PERIODICAL LIST

American Forests

Conservation views of the American Forestry Association.

American City Magazine

Deals with management and engineering of municipal and government services.

Audubon

Deserves its reputation as the most beautiful nature magazine in the world.

Chesapeake Bay

Chesapeake Bay Communications
130 Severn Avenue
Annapolis, Maryland 21403

City

Authoritative articles on urban affairs and needs of the cities.

Environment

Published by the Scientists Institute for Public Information. The magazine deals with all types of environmental problems and is considered the leading mass circulation magazine in the field.

Environmental Science and Technology

A broad-based magazine interested in the improvement of the environment — especially water, air, and waste chemistry.

The Journal of Environmental Education

Dembar Educational Research Services, Inc.
Box 1605
Madison, Wisconsin 53701

The Living Wilderness

Maryland Conservationist

An excellent conservation magazine with the State of Maryland as its primary focus.

National Wildlife

Ranger Rick's Nature Magazine

Telesis

Earth Awareness Foundation
1730 NASA Boulevard, Suite 209
Houston, Texas 77058

Weatherwise

A superior magazine featuring articles on the science of meteorology, climatology, and weather.

ENVIRONMENT

Volume 17, Number 2
March 1975



A recent survey of environmental educators carried out by Peter Sandman and his colleagues at the School of Natural Resources, University of Michigan, provides an opportunity to look at the attitudes of environmental educators.

In June 1974, the School of Natural Resources (with funding from the Division of Technology and Environmental Education, U.S. Office of Education) sponsored a working conference entitled *Emerging Issues in Environmental Education*. In preparation for that conference, a questionnaire was mailed to about 350 environmental educators — those who had responded to an earlier questionnaire, plus all those who had received a grant from the Office of Environmental Education during the previous two years; 199 questionnaires were returned. (Women were a clear minority of the respondents, probably because of the institutionalized sexism of the environmental movement rather than a biased sample.)

The educators were asked to agree or disagree with 45 statements concerning many aspects of environmental education, and then to evaluate the importance of each of the issues. There is not enough space here to pursue in detail the method of analysis or the statements that were evaluated, but in general, the 45 statements seemed carefully constructed, and the overall approach seemed sound. Results of the survey provide some indication of the political and economic views, educational philosophy, and values of environmental educators. Only one of the many issues analyzed will be discussed here. Interested readers are encouraged to obtain the full study from Sandman at the University of Michigan, Ann Arbor. The proceedings will also soon be published by the Office of Education, Division of Technology and Environmental Education.

The responses to the questionnaire indicated quite clearly that environmental educators believe that it is important for educators and students to become involved in community issues and to help solve local problems. They also feel that community members of all kinds should be involved in the design and implementation of environmental education programs. These, and other responses, show that the participating educators believe environmental education should be a *grassroots*, *socially relevant*, and *active* experience, unlike traditional education. But while the respondents do clearly hold these views, they just as clearly disagree on whether the goals of such involvement require radical change in the American economic system, and whether environmental improvement will be to the disadvantage of certain groups whose hardship must be lessened.

Wilderness Camping

An ecology minded magazine featuring hiking, camping, and survival techniques.

The following periodicals are not available in the school or public libraries, but are not outrageously expensive to subscribe to and are all worthwhile:

Backpacker. All about the hiking world for the hiker.
28 W. 44th Street
New York, New York 10036

Catalyst for Environmental Quality

274 Madison Avenue, Suite 904
New York, New York 10016

The Conservationist

New York State Conservation Department
State Campus
Albany, New York 12226

Clean Air

National Society for Clean Air
136 North Street
Brighton, BNI, IRG, England

Environmental Affairs

Environmental Law Center
Boston College Law School
Brighton, Massachusetts 02135

Natural Parks and Conservation Magazine

National Parks and Conservation Association
1701 18th Street, NW.
Washington, D.C. 20009

Landscape Architecture

1190 E. Boradway
Louisville, Kentucky 40204

SPOTLIGHT Library Use

The periodicals in the Environmental Resource Guide are directly available from the local Montgomery County Public Library unless otherwise noted. All of these magazines are listed along with their subscription department address and cost of the magazine.

Before directing your students to their local libraries, remind them that some magazines will not be obtainable there but can easily be acquired by phoning a library that does have it. This inter-library loan service is available at all branches. Magazine holdings are listed in the Periodicals Holdings List at the librarian's desk.

INSTRUCTIONAL GUIDES

How to Use ERIC to Retrieve Instructional Guides

The Educational Resources Information Center (ERIC) is a national information system containing thousands of educational documents. Many of these documents (including learning units, reports, theses, etc.) are available on microfiche at the Educational Services Center.

Listed below are brief summaries of environmental education units, most of which are contained in the ERIC system. Often the complete units include pictures, maps, charts, objectives, and other information useful to the classroom teacher. A teacher may request reproduction of any of the units in their entirety by contacting the Educational Services Center. Copies are free of inexpensive.

All Around You, An Environmental Study Guide.

Sold by U.S. Government Office, Stock #2411-00043. A 177-page teacher workbook with activities. Published by U.S. Department of the Interior, Bureau of Land Management.

Ecological Investigations, Curriculum Guide. #ED 079099.

A 194-page guide, published by North Carolina State Department of Public Instruction for 8th and 9th graders. Activities deal with the following concepts: "Interrelationships," "Nature's Law of Supply and Demand," "To Each His Own," "The Only Thing Constant Is Change," and "Adversity and Diversity."

Water Quality Control, Curriculum Guide. #ED 079100.

A 209-page published by North Carolina State Department of Public Instruction for 8th and 9th graders. Students study how water is used, contaminated, and treated. Culminates in a study of a local water quality problem.

Social Studies: Eco-Politics. ED 059958.

Dade County (Florida) Public Schools. 40 pages. For Grades 10 through 12. Includes content outline and materials for units on ecological principles; environmental problems; economics of pollution; government and pollution; industry and pollution; pollution control; individual action; and future implications of environmental policy.

Social Studies: Cities in Crisis. #ED 061126.

Published by Dade County (Florida) Public Schools, this 38 page guide is for Grades 10 through 12. Content: 1) History of American urban development; 2) Environmental, sociological, economic, and political problems of cities; 3) Legislation and housing; 4) Prejudice and discrimination; 5) Local politics; 6) The need and effects of zoning; and 7) Developing a city plan.

The Development of a Subdivision Within the Parkway School District. Environmental Ecological Education Project. Revised. #ED 098068.

Designed for Parkway School District, Chesterfield, Missouri junior high students, but "could be adapted for use in any suburban area where subdivisions exist." 160 pages. Focuses on the factors involved in subdivision design and planning.

Meet Me In St. Louis, Louie, But Leave Your Car At Home. (A Unit in Transportation) *Environmental Ecological Education Project.* Revised. #ED 098069.

Published by Parkway School District, Chesterfield, Missouri for students in that district, but "could be adapted for use in other junior high school settings." Topics include types of transportation, automobile pollution, and effects of the increasing auto use on the American life style. 192 pages.

Population. Environmental Ecological Education Project. #ED 098072.

This 253-page guide (activities included) was published for high school by Parkway School District, Chesterfield, Missouri. Topics: Effects of a growing population; Urbanization; Family Structures; Family Planning; Consumption; Environmental Decay; and Controlling the Environment.

This Land is Your Land. The Problem of Land Utilization. #ED 099210.

An 82-page guide published by Parkway School District, Chesterfield, Missouri, for 7th graders. Examines factors involved in the utilization of land in St. Louis County, Missouri.

Man and Nature — A Literature Course. Project Reports, Vol. 1, The Rachel Carson Project. #ED 099186.

Corvallis School District 509J, Oregon. This guide focuses on English Literature by emphasizing the environment through Edward Abbey's *Desert Solitaire*.

Environmental Studies in the Physical Sciences. Project Reports, Vol. 3, The Rachel Carson Project. #ED 099188.

Corvallis School District 509J, Oregon. 77 pages. Environmentally-related activities implemented in high school physics and chemistry courses: forms of energy; first law of thermo-dynamics; environmental impact of energy; literature research; model building; field research; and water quality investigation.

Case Studies of Conservation "Battles." Project Reports, Vol. 5, The Rachel Carson Project. #ED 099190.

Corvallis School District 509J, Oregon. 106 pages. Two case studies of conservation organizations and their environmental campaigns. Includes activities.

Environmental Studies in Nine Courses at Crescent Valley High. Project Reports, Vol. 6, The Rachel Carson Project. #ED 099191.

Developed by Corvallis School District 509J, Oregon. 75 pages. Contains units and activities on environmental education that can be used in high school courses on psychology, typing, architecture, foreign languages, algebra, world studies, and home economics.

A Curriculum Activities Guide to Solid Waste and Environmental Studies. #ED 080348.

A 312-page guide from the Institute for Environmental Education, Cleveland, Ohio. Students observe and collect and evaluate data on solid waste problems in their community.

A Curriculum Activities Guide to Population and Environmental Studies. #ED 080349.

A 197-page guide from the Institute for Environmental Education in Cleveland, Ohio. Population and the environment is treated from the aspects of economics, politics, sociology, science, technology, aesthetics, and law.

A Curriculum Activities Guide to Water Quality Equipment and Environmental Studies. #ED 080361.

A 182-page guide produced by the Institute for Environmental Education, Cleveland, Ohio. Construction plans for 23 pieces of water quality testing equipment enable students to build their own tools and then investigate physical, chemical, micro- and macrobiological factors of water.

A Curriculum Activities Guide to Birds, Bugs, Dogs, and Weather and Environmental Studies. Vol. 5. Second Edition. #ED 093619.

This 159-page guide was prepared by the Institute for Environmental Education, Cleveland, Ohio. Three levels of activities: "awareness" concerns; "transitional" activities directed toward real community concerns; "operational" activities which are integrated with community action.

A Curriculum Activities Guide to In-depth Environmental Studies. #ED 083004.

Published by the Institute for Environmental Education, Cleveland, Ohio. Students collect and evaluate environmental data and propose community action. Topics investigated: birds, weather, ferns, air quality, and vegetation and weeds.

Project Q.U.E.S.T. (Quality Urban Environmental Studies Training). #ED 099240.

A 180-page guide published by Brockton (Massachusetts) Public Schools for high school. Contains mathematics, science, and social studies activities for studying urban environmental problems.

Environmental Studies. The Construction of An "A" Level Syllabus. #ED 070635.

A 157-page syllabus published in London by the National Foundation for Educational Research in England and Wales for advanced junior high students. Four sections: processes and systems of the natural environment, the ecosystem, interaction of man and the environment, and environmental conflicts and planning. Multidisciplinary.

Environmental Education Exercises, Junior High 7-8. #ED 081614. 130 pages, 62 exercises.**Environmental Education Exercises, Senior High 9-12.** #ED 801615. 49 pages, 34 exercises.

Both of these guides were developed by Bourbon County Schools, Paris, Kentucky. The junior high exercises are directed toward art, language arts, science, social studies, and special education. Senior high activities can be used in biology, language arts, science, and social studies courses.

Student Action for the Valley Environment (SAVE). #ED 081601.

A 159-page guide produced by the Arizona State Department of Education for high school students. Primarily a "simulation program concerned with a serious problem of today — the survival of life in the cities." Students propose alternate ways of structuring a new city.

Multidisciplinary Activities for Environmental Learning. #ED 093589.

A 242-page guide published by Genesee Intermediate School District, Flint, Michigan. Multidisciplinary activities from K-12.

Environmental and Natural Resources Occupations in Agricultural Education. A Teacher's Guide. Preliminary Draft. #ED 090389.

A 166-page guide designed by South Carolina's State Department of Education. A one year high school course on ecology, weather, land use, population, and our environment as they relate to agricultural education.

Field Learning Activities. #ED 080366.

Published by Nolde Forest Environmental Education Center, Reading, Pennsylvania for elementary and junior high use. 281 pages. Multidisciplinary activities on the following topics: soil study, animal traces, watersheds, ecosystems, food chains, stream surveys, and effects of air pollution. Outdoor education emphasized.

Environmental Activities, K-12 Environmental Education Program, Summer Work, 1972. #ED 079068.

Prepared by the Menomonie (Wisconsin) Public Schools, this 42-page guide has 38 multidisciplinary "activity centers."

Environmental Education Curriculum Guide, Grades 1-12, Experimental Draft. #ED 081641.

A 327-page guide published by Somerset (Kentucky) Board of Education for K-12. Contains environmental activities for integration into almost all regular courses.

Teaching Materials for Environmental Related Courses in Agriculture Occupations Programs. #ED 085485.

Published by Southern Illinois University, Carbondale, Department of Agriculture Industries. Could be used in 9th and 10th grade biology classes. Topics: ecosystems, energy and nutrient flow, land use, population, energy crisis natural resources, food production and supplies, and ecological current events.

Environmental Activities, Senior High School. #ED 099215.

Published by Laramie County School District 1, Cheyenne, Wyoming. Includes learning activities on advertising as an ecological cop-out; recycling; optimum environments; hydroponics; pest control; and controlling smoke, lead, and phosphate pollution. 89 pages.

Mounds View Environmental Education Project, Report No. 1. #ED 063162. 1971

This 58-page guide was prepared for the National Science Teachers Association's meeting in Washington, D.C. Includes a senior high guide for teaching "Environmental Problems and the Future of Man" (population explosion, food supply, natural resources, water and air pollution); junior high guides to students on soil conservation, animal poetry, pollution studies; and classroom and outdoor activities for both the senior high and junior high guides.

Geography in An Urban Age — Curriculum Guide. 1970, McMillan Company.

High School Geography Project — Unit 5 (Environmental Education)

Contents:

Habitat and Resources

Habitat and Man

Two Rivers — different cultural approach to water use

Watching — a study in environmental change as a result of suburbanization

Rutile and the Beach — conflict between mining and recreation land use

Flood Hazards — flood plain management

Water Balance

Waste Management — a case study

The High School Geography Project was developed by the Association of American Geographers, 1710 16th

Street, NW., Washington, D.C. 20009. The Association procedures secondary and college educational materials that deal with how geography effects the environment.

GUIDES AND CATALOGS

Buyer's Guide to Environmental Media: A Directory of Books, Magazines, Films, and Information Sources.

A quarterly smattering of environmental resources in all subject areas. There is a wealth of information in the sixty-five page catalog. There is a scaled down version of *The Environmental Film Review*. Although *The Buyer's Guide* is smaller, it should be considered that it is infinitely more economical. Available from: Environmental Information Center, Media Services Department, 124 E. 39th Street, New York, New York.

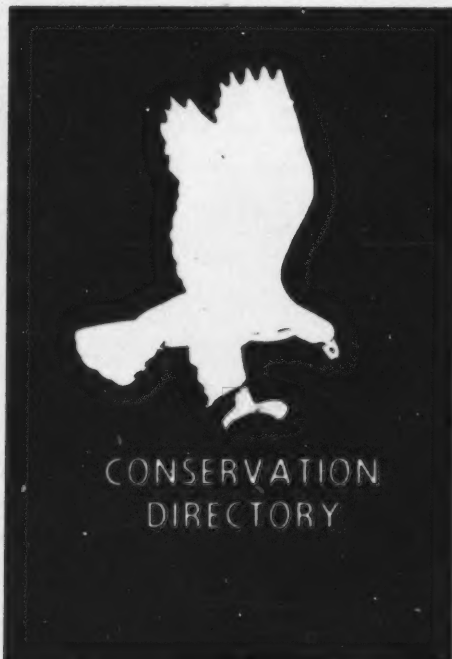
BUYER'S GUIDE TO ENVIRONMENTAL MEDIA



A DIRECTORY OF BOOKS, MAGAZINES, FILMS, AND INFORMATION SOURCES

Conservation Directory: A List of Organizations, Agencies, and Officials Concerned with Natural Resource Use and Management.

An exhaustive annual index of organizations and people officially involved in environmental and wildlife conservation. It is considered the top publication in the field. Available from: National Wildlife Federation, 1412 Sixteenth Street, NW., Washington, D.C. 20036.



ECOL Book Catalog.

First launched as a public department of the Minnesota Public Libraries in April 1972, and funded by the state to lend books and provide information without charge to Minnesota residents. Brings together publication which relate to our physical environment and our impact upon it. The annotated list of bibliographical and resource materials would be helpful to individuals with a specific reference in mind.

Environmental Film Review.

The directory is a compilation of 600 superior environmental films and provides information on length, purchase and rental costs, distributors' addresses, and film descriptions.

STATE DEPARTMENT OF HEALTH AND MENTAL HYGIENE,
Environmental Health Administration, 610 N. Howard St.,
Baltimore 21201

(State water pollution control program for sewage treatment.)
Director: HOWARD E. CHANEY (301, 383-2740)

STATE SOIL CONSERVATION COMMITTEE, Parole Plaza Office
Bldg., Annapolis 21401 (301, 267-1338)

(A state agency established in 1937 to organize soil conservation districts and to give guidance and assistance to districts. Membership includes representatives from the Department of Natural Resources, Department of Agriculture, Maryland Agricultural Commission, University of Maryland, Maryland Association of Soil Conservation Districts, and four soil conservation district supervisors. The Committee became a unit of the Maryland Dept. of Agriculture Jan. 1, 1973.)

Chairman: WILBERT R. PAUL (301, 264-4842)

Vice Chairman: FRANK BENTZ, Jr. (301, 454-3704)

Executive Secretary: ARNOLD C. HAWKINS (301, 267-1338)

STATE EXTENSION SERVICES

Director of Extension Service (and Sea Grant): Dr. ROBERT E. WAGNER, University of Maryland, College Park 20742 (301, 454-3742)

Extension Products Marketing Specialist: J. L. CROTHERS, Symons Hall, University of Maryland, College Park 20742 (301, 454-3226)

Fish and Wildlife Specialist: DEAN TUTTILL, Ph.D., Dept. of Agricultural and Resource Economics, University of Maryland, College Park 20742

Asst. Director, Agricultural Programs: ELWYN E. DEAL, University of Maryland, College Park 20742 (301, 454-4407)

UNIVERSITY OF MARYLAND CENTER FOR ENVIRONMENTAL AND ESTUARINE STUDIES, Cambridge 21613 (301, 228-8200)

Director: Dr. PETER E. WAGNER

Assoc. Director for Estuarine Programs: Dr. L. EUGENE CRONIN
Horn Point Environmental Laboratories, Cambridge 21613 and
Crisfield Laboratory, Crisfield 21817

Resident Engineering Scientist: PAUL N. WINN, Jr.

Chesapeake Biological Laboratory, Solomons 20668

Inland Research Laboratory, College Park 20742

Appalachian Research Laboratory, LaVale 21502

CITIZENS' GROUPS

MARYLAND WILDLIFE FEDERATION, P.O. Box 7207,
Baltimore 21218 (301, 467-3200)

(A representative statewide organization, affiliated with the National Wildlife Federation, primarily devoted to the wise use, preservation, aesthetic appreciation, and restoration of wildlife and other natural resources. Organized: 1961.)

President: PAUL M. BREIDENBAUGH

Secretary: NORMAN BREIDENBAUGH, 4130 Glen Park Rd.,

Baltimore 21236 (301, 256-4258)

Affiliate Representative: PAUL M. BREIDENBAUGH

Alternate: HARRY L. POWERS, Jr., 827 Washington St.,

Hagerstown 21704 (301, 678-5187)

Publication: Newsletter

Editor: PAUL M. BREIDENBAUGH

CHESAPEAKE BAY FOUNDATION, INC., P.O. Box 1709, Prince
George & East Sts. "Church," Annapolis 21404 (301, 268-8816)

(A nonprofit charitable, educational and representational membership organization established to promote the environmental welfare of Chesapeake Bay, including its tidal tributaries. The Foundation operates three programs: citizen representation, environmental education, land preservation. Organized: 1966.)

President: TROWBRIDGE STRONG, Philadelphia

Executive Director: ARTHUR W. SHERWOOD

Assistant Directors: H. K. RIGG, WILLIAM B. MULLINS

Staff Attorney: F. LINES KELLY

Educational Director: JOHN PAGE WILLIAMS, Jr.

Membership Director: ALBERT WINCHESTER III

Biologist: NANCY DIMSDALE

Publications: CBF Newsletter; Chesapeake Bay Journal

CONSERVATION EDUCATION COUNCIL OF MARYLAND

(Encourages activities and development programs that help educate the public in the conservation of our natural resources. Helps coordinate the efforts of the many organizations in Maryland having an interest in conservation education. Organized: 1964.)

Chairman: Mrs. LOUISE C. RYMER, P.O. Drawer 120, Upper Marlboro 20870

Vice Chairman: Dr. JOSEPH T. HOWARD, 9501 Bruce Dr., Silver Spring 20901

Secretary: KENT B. FULLER, Dept. of Conservation Education, University of Maryland, Natural Resources Institute, Box 3266, LaVale 21502 (301, 729-0904)

Treasurer: ARNOLD C. HAWKINS, 2207 Brown Station Rd., Upper Marlboro 20870

ISAAC WALTON LEAGUE OF AMERICA, INC. (Maryland Div.),

6700 Needwood Rd., Derwood 20855 (301, 926-8713)

President: MINER BUELL, 5617 Oak Place, Bethesda 20034

Vice President: JAMES EVANS, 4007 Lawrence Ave., Kensington 20795

Executive Secretary: MALCOLM KING, 11131 Game Preserve Rd., Gaithersburg 20870

MARYLAND ASSOCIATION OF SOIL CONSERVATION DISTRICTS, INC., Parole Plaza Office Bldg., Annapolis 21401 (301, 267-1338)

(The Association was formed in 1945 to exchange information and effect cooperation between the Maryland soil conservation districts; to cooperate with conservation agencies; and to promote the interest and activities of civic and other organizations in the conservation of soil, water, and related natural resources. Membership is composed of all Maryland soil conservation district supervisors.)

President: FRED LIESKE, Rt. 1, Rising Sun 21911 (301, 658-5270)

Vice President: WILBERT R. PAUL, R.D. 1, Box 116, Mt. Savage 21545 (301, 264-4842)

Secretary: DALE E. CHURCHY, State Soil Conservation Committee, Parole Plaza Office Bldg., Annapolis 21401 (301, 267-1338)

Treasurer: FLOYD ALLRED, Colona 21917 (301, 658-4412)

MARYLAND ENVIRONMENTAL TRUST, 8 E. Mulberry St.,
Baltimore 21202 (301, 383-4264)

(Formed to conserve, improve, stimulate, and perpetuate the aesthetic, natural, health and welfare, scenic, and cultural qualities of Maryland's environment. Works with County Committees, Easement program, land use, and legislation. Created by State Legislature: 1967.)

Chairman: GEORGE S. WILLS, 7914 Sherwood Ave., Ruxton 21204 (301, 823-9243)



The Environment Film Review



The Environment Film Review is an extremely worthwhile catalog. The Environmental Information Center, although a profit-making group, seems genuinely interested in facilitating access to environmental information. the **Film Review** is also available at some public libraries for reference room use only. Available from: Environmental Information Center, Film Reference Department, 124 E. 39th Street, New York, New York 10016.

Note: When ordering, emphasize the fact that you are a non-profit educational organization.

Environmental Films Available on Loan From Agencies of the Federal Government.

An excellent listing of free films available from governmental agencies. Ordering the films can be a drawback; for since demand is heavy for such a service, requests must be made up to three months in advance of the date needed. For most films, the borrower pays only for insurance and fourth class return postage.

The scope of the films varies ranging from the Department of Agriculture cartoon *Adventure of Junior Raindrop* to the award-winning documentary *A Question of Values*, about a small Maine town torn by a conflict between environmental preservation and economic development in the form of a huge oil refinery. Available by written request through: Office of Education and Manpower, Environmental Protection Agency, Waterside Mall, 401 M Street, SW., Washington, D.C. 20460.

Publications in Environmental Education: Bibliography of Federal Government Materials.

This is an annotated guide to pamphlets and booklets published by the Government Printing Office under the auspices of specific environmental related government agencies. The pamphlets cover many subject areas and prices vary, with most costing between 25 and 50 cents. Before ordering the materials, however, check for them in the vertical file of your school and public libraries, since librarians frequently are on a government mailing list of new publications. Available by written request through: Office of Education and Manpower, Environmental Protection Agency, Waterside Mall, 401 M Street, SW., Washington, D.C. 20460

Environment and Outdoor Education Materials Catalog #2.

This catalog lists over a thousand kits, games, and ideas having to do with the environment and related subjects. Available from: Environmental and Outdoor Education Materials Company, Dowling, Michigan 49050.

Can't find that ecology book that you've been looking for?

Write:

Ecology Center Confederation
13 Columbus
San Francisco, California 94111

The Confederation handles out-of-print ecology classics.

MORE, MORE, MORE . . .

Buffalo: An Ecological Success Story. (MCPS F-6524) P,I,J,S. 13 min. color.

Environment. I (MCPS F-6287) K,P. 5 min. color.

Forest Fisherman: Story of An Otter. (MCPS F-6329) P,I,J. 16 min. color.

How to Study Ecology: A First Film. (MCPS F-6309) P,I,J. 11 min. color.

Life In An Old Tree. (MCPS F-6353) P,I. 13 min. color.

Life on the Forest Floor: A First Film. MCPS F-6518) P. 10 min. Color.

Oceans: The Silent Crisis. (MCPS F-6389) I,J,S. 24 min. color.

Shows contamination of the Mississippi River with arsenic, cyanide, mercury, and other wastes.

The Enduring Wilderness. (MCPS F-6352) J,S. 28 min. color.

Sorry, No Vacancy. (MCPS F-6331) J,S. 52 min. color. Population growth and the environment.

The Restless Earth: Geology and Man. (MCPS F-6477) J,S. 19 min. color.

Man producing carbon dioxide and exhausting ores.

The Sixth Continent. (MCPS F-6513) J,S. 21 min. color.

The Plow That Broke the Plains. (MCPS F-6513) J,S. 21 min. color.

Social, economic, and environmental history of the Great Plains up through the Dust Bowl. A classic, with music by Virgil Thompson.

Wanted Alive. (MCPS F-6240) P,I. 10 min. color. Pollution, insecticides, and wanton killing threaten animal species.

What's on Earth? (MCPS F-6336) I,J,S. 10 min. color. Martians visit Earth and note the dominance of the automobile.

Who Stole the Quiet Day. (MCPS F-6527) P,I,J. 16 min. color. Noise pollution.

